

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Chris Henderson Examiner #: 60202 Date: 8-15-00
 Agency: 1713 Phone Number: 301-524-417 Serial Number: 09-575051
 Mail Box and Bldg/Room Location: CP3 4B12 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic and describe as specifically as possible the subject matter to be searched. Include the desired species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the coversheet, pertinent claims, and abstract.

Title of Invention: Diene rubber compounds for improved rubber making
 Inventors (please provide full names): Winfred Jerke, Hartmut Buding, et al

Earliest Priority/Filing Date: June 1, 1999

For Sequence Searches Only: Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

STAFF USER ONLY

Type of Search

Vendors and cost, where applicable

Searcher

JDA

Sequence (#)

SN

Searcher Phone

214-524-417

Sequence (#)

Dialog

Searcher's Name

JDA

Sequence (#)

Queue/Order

Date Search Requested

8-15-00

Bibliographic

DrLink

Date Completed

8-15-00

Library

Lexis/Nexis

Searcher's Review Date

8-15-00

Full Text

Sequence System

Clerical Input Date

8-15-00

Patent Family

WWW/Internet

Online Date

8-15-00

Other

Other (specify)

PTO-1590 (1-2000)

Best Available Copy

NODE ATTRIBUTES:

GRAPH ATTRIBUTES:

STEREO ATTRIBUTES: NONE

Trivette
3979369

525

L10 ANSWER 1 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 2000:376852 HCAPLUS

DN 133:18674

TI Rubber compositions and pneumatic tires therefrom with long-lasting good maneuvering stability and riding feel

IN Sugimoto, Kenichi; Hojo, Masahiro; Kamo, Shigeki

PA Bridgestone Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

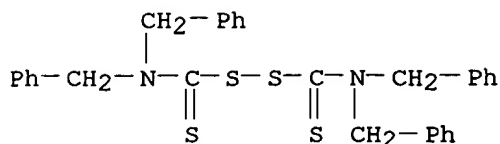
IC ICM C08C019-26

ICS B60C001-00; C08K003-10

CC 39-13 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000154203	A2	20000606	JP 1998-347918	19981119
AB	The compns. comprise diene rubber(s) 100, vulcanization accelerators 0.5-5.0, and S 1.0-3.5 parts, where the total Zn content is 0.65 to 1.80 parts. Thus, 100 parts diene rubber (SBR 1500) was blended with ZnO 2, antiaging agents 1.3, Zn O,O'-dibutyl dithiophosphate 1.5, N-tert-butyl-2-benzothiazolylsulfonamide (Nocceler NS) 0.8, S 1.5, carbon black 60, arom. oils 30, and stearic acid 2 parts and vulcanized to give a test piece, showing Zn content 1.79 parts and good elasticity even after an aging test at 100.degree. for 96 h.				
ST	rubber compn zinc content tire tread; SBR pneumatic tire maneuvering stability; vulcanization inhibition zinc content tire tread				
IT	Styrene-butadiene rubber , uses				
	RL: DEV (Device component use); USES (Uses)				
	(SBR 1500; rubber compns. for pneumatic tires with long-lasting good maneuvering stability and riding feel)				
IT	Vulcanization				
	(from thermal history, inhibition of; rubber compns. for pneumatic tires with long-lasting good maneuvering stability and riding feel)				
IT	Vulcanization accelerators and agents				
	(rubber compns. for pneumatic tires with long-lasting good maneuvering stability and riding feel)				
IT	Tires				
	(treads; rubber compns. for pneumatic tires with long-lasting good maneuvering stability and riding feel)				
IT	9003-55-8				
	RL: DEV (Device component use); USES (Uses)				
	(styrene-butadiene rubber , SBR 1500; rubber compns. for pneumatic tires with long-lasting good maneuvering stability and riding feel)				
IT	95-31-8, Nocceler NS 120-78-5 557-05-1, Zinc stearate 1314-13-2, Zinc white, uses 3486-35-9, Zinc carbonate 6990-43-8, Zinc o,o-dibutyl dithiophosphate 10591-85-2 14726-36-4, Zinc dibenzylidithiocarbamate 37437-21-1 80745-82-0				
	RL: CAT (Catalyst use); USES (Uses)				
	(vulcanization catalyst; rubber compns. for pneumatic tires with long-lasting good maneuvering stability and riding feel)				
IT	10591-85-2				
	RL: CAT (Catalyst use); USES (Uses)				
	(vulcanization catalyst; rubber compns. for pneumatic tires with long-lasting good maneuvering stability and riding feel)				
RN	10591-85-2 HCAPLUS				



L10 ANSWER 2 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 2000:335089 HCAPLUS

DN 132:348881

TI Vulcanizable rubber compositions containing styrene-butadiene and butadiene rubbers

IN Jeske, Winfried; Buding, Hartmuth; Weidenhaupt, Hermann-Josef

PA Bayer Aktiengesellschaft, Germany

SO Eur. Pat. Appl., 9 pp.

CODEN: EPXXDW

DT Patent

LA German

IC ICM C08K005-39

ICS C08L021-00

CC 39-10 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1000968	A1	20000517	EP 1999-120968	19991103
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000143877	A2	20000526	JP 1999-316711	19991108
PRAI	DE 1998-19852647		19981116		
AB	A rubber compd. capable of providing tire treads with improved abrasion resistance contains SBR 20-90, BR 10-50, natural rubber or its synthetic equiv. 0-40, and activated SiO ₂ filler 40-90 phr, together with conventional additives, and is vulcanized with a mixt. comprising (PhCH ₂) ₂ NC(S)SS(CH ₂) ₆ SSC(S)N(CH ₂ Ph) ₂ (I) 0.5-3.5, S 0.3-1.5, N-cyclohexyl- or N-tert-butyl-2-benzothiazolesulfenamide 1-3, and (PhNH) ₂ C:NH 0.5-4 phr. Thus, a mixt. contg. Buna VSL 5025-1 103, Buna CB 25 25, Vulkasil S 70, Si 69 6, various additives 22, Vulkacit CZ/C 1.8, Vulkacit D/C 2, S 0.5, and I 1 part gave a vulcanizate with similar phys. properties except much better abrasion resistance than obtained with a similar mixt. contg. 1.5 parts S and no I.				
ST	abrasion resistance tire tread; hexamethylene bisdibenzylthiocarbamoyl disulfide accelerator rubber blend				
IT	Butadiene rubber , properties RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses) (Buna CB 25; vulcanizable rubber compns. contg. styrene-butadiene and butadiene rubbers)				
IT	Styrene-butadiene rubber , properties RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses) (Buna VSL 5025-1; vulcanizable rubber compns. contg. styrene-butadiene and butadiene rubbers)				
IT	Abrasion-resistant materials (from vulcanizable rubber compns. contg. styrene-butadiene and butadiene rubbers)				
IT	Tires (treads; vulcanizable rubber compns. contg. styrene-butadiene and butadiene rubbers for)				
IT	102-06-7, N,N'-Diphenylguanidine RL: CAT (Catalyst use); USES (Uses) (Vulkacit D/C; vulcanizable rubber compns. contg. styrene-butadiene and butadiene rubbers)				

SAME as In 5

IT 40372-72-3, Si 69
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)
 (butadiene **rubber**, Buna CB 25; vulcanizable **rubber** compns. contg. styrene-butadiene and butadiene **rubbers**)

IT 9003-55-8
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)
 (styrene-butadiene **rubber**, Buna VSL 5025-1; vulcanizable **rubber** compns. contg. styrene-butadiene and butadiene **rubbers**)

IT 95-33-0, Vulkacit CZ/C
 RL: CAT (Catalyst use); USES (Uses)
 (vulcanizable **rubber** compns. contg. styrene-butadiene and butadiene **rubbers**)

IT 7631-86-9, Vulkasil S, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (vulcanizable **rubber** compns. contg. styrene-butadiene and butadiene **rubbers**)

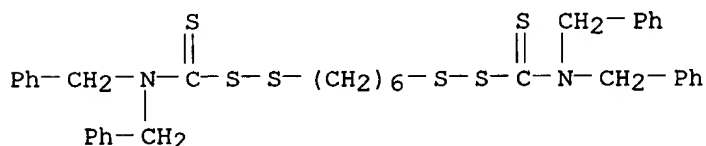
IT 7704-34-9, Sulfur, reactions
 RL: RCT (Reactant)
 (vulcanizable **rubber** compns. contg. styrene-butadiene and butadiene **rubbers**)

IT 151900-44-6
 RL: RCT (Reactant)
 (vulcanizing agent; vulcanizable **rubber** compns. contg. styrene-butadiene and butadiene **rubbers**)

RE.CNT 2
 RE
 →(1) Bayer Ag; EP 0785230 A 1997
 (2) Huels Chemische Werke Ag; EP 0530590 A 1993

IT 151900-44-6
 RL: RCT (Reactant)
 (vulcanizing agent; vulcanizable **rubber** compns. contg. styrene-butadiene and butadiene **rubbers**)

RN 151900-44-6 HCAPLUS
 CN Carbamo(dithioperoxo)thioic acid, bis(phenylmethyl)-, 1,6-hexanediyl ester (9CI) (CA INDEX NAME)



L10 ANSWER 3 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1999:133446 HCAPLUS
 DN 130:197799
 TI Nitrosoamine precursor-free vulcanizable rubber compositions and tires therefrom
 IN Nakadera, Keiichi
 PA Sumitomo Rubber Industries Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C08L021-00
 ICS B60C001-00; B60C011-00; C08K003-06; C08K005-44; C08K005-47
 CC 39-13 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

PI JP 11049897 A2 19990223 JP 1997-213725 19970807

AB Title compns., which could be vulcanized in a short period of time at 100-190.degree. and showed good adhesion to polyester cords, contain natural, isoprene, butadiene and/or SBR rubbers, S, benzothiazylsulfenamides and/or mercaptobenzothiazoles as primary vulcanization accelerators, and Zn dibenzylthiocarbamates and/or tetrabenzylthiuram disulfides as secondary vulcanization accelerators. A compn. contg. natural rubber 70, SBR 30, carbon black 50, an antiaging agent 1, stearic acid 2, ZnO 5, S 4, Nocceler NS 1, and Nocceler ZTC 1 part was kneaded, covered on polyester cords to form a composite, and vulcanized at 180.degree. for 6.5 min to form a product showing good adhesion initially and after 1 wk at 80.degree. and 80% relative humidity.

ST adhesion polyester cord fast vulcanizable rubber tire carcass; vulcanization accelerator rubber tire carcass

IT Tires
(carcasses; nitrosoamine precursor-free vulcanizer-contg. **rubber** compns. with good adhesion to polyester cords for tire carcasses)

IT Vulcanizing agents
(nitrosoamine precursor-free vulcanizer-contg. **rubber** compns. with good adhesion to polyester cords for tire carcasses)

IT Butadiene **rubber**, properties
Isoprene **rubber**, properties
Natural **rubber**, properties
Styrene-butadiene **rubber**, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(nitrosoamine precursor-free vulcanizer-contg. **rubber** compns. with good adhesion to polyester cords for tire carcasses)

IT Polyester fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(nitrosoamine precursor-free vulcanizer-contg. **rubber** compns. with good adhesion to polyester cords for tire carcasses)

IT 9003-17-2
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(butadiene **rubber**, nitrosoamine precursor-free vulcanizer-contg. **rubber** compns. with good adhesion to polyester cords for tire carcasses)

IT 9003-31-0
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(isoprene **rubber**, nitrosoamine precursor-free vulcanizer-contg. **rubber** compns. with good adhesion to polyester cords for tire carcasses)

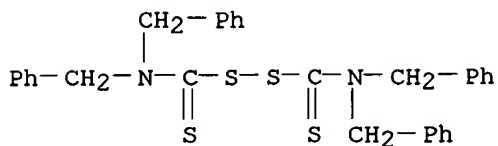
IT 95-31-8, Nocceler NS 149-30-4, Nocceler M 7704-34-9, Sulfur, uses **10591-85-2**, Tetrabenzylthiuram disulfide 14726-36-4, Nocceler ZTC
RL: CAT (Catalyst use); USES (Uses)
(nitrosoamine precursor-free **vulcanizer**-contg. **rubber** compns. with good adhesion to polyester cords for tire carcasses)

IT 9003-55-8
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(styrene-butadiene **rubber**, nitrosoamine precursor-free vulcanizer-contg. **rubber** compns. with good adhesion to polyester cords for tire carcasses)

IT **10591-85-2**, Tetrabenzylthiuram disulfide
RL: CAT (Catalyst use); USES (Uses)
(nitrosoamine precursor-free **vulcanizer**-contg. **rubber** compns. with good adhesion to polyester cords for tire carcasses)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 4 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1998:786464 HCAPLUS
 DN 130:85460
 TI Environmental hazards by dumping rubber waste in unsealed landfill sites
 AU Buettner, R.
 CS Thueringisches Institut Textil- Kunststoff-Forschung e.V., Rudolstadt, Germany
 SO Gummi, Fasern, Kunstst. (1998), 51(11), 906-911
 CODEN: GFKUED; ISSN: 0176-1625
 PB Dr. Heinz Gupta Verlag
 DT Journal
 LA German
 CC 60-5 (Waste Treatment and Disposal)
 Section cross-reference(s): 39, 61
 AB The environmental impact of non-sealed rubber dumping sites was investigated including the anal. of the hazardous potential of the different substances included in the wastes and of eluates. Rubber components, such as polymers, plasticizers, vulcanization accelerators, antioxidants, and flame proofing agents were assessed with regard to their environmental impact in landfills and groundwater. The environmental hazard of the rubber waste in the investigated dumping sites was assessed as minimal as the measurable contamination reached a depth of 8 m and the groundwater is present in a depth of 25 m.
 ST environment pollution landfilling rubber waste; groundwater pollution landfilling rubber waste
 IT Environmental pollution
 Groundwater pollution
 Landfill
 Waste plastics
 (environmental hazards by dumping **rubber** waste in unsealed landfill sites)
 IT Heavy metals
 RL: MSC (Miscellaneous); POL (Pollutant); OCCU (Occurrence)
 (environmental hazards by dumping **rubber** waste in unsealed landfill sites)
 IT Antioxidants
 Fireproofing agents
 Plasticizers
 Vulcanizing agents
 (in **rubber** wastes; environmental hazards by dumping **rubber** waste in unsealed landfill sites)
 IT **Rubber**, occurrence
 RL: MSC (Miscellaneous); POL (Pollutant); OCCU (Occurrence)
 (waste; environmental hazards by dumping **rubber** waste in unsealed landfill sites)
 IT 95-33-0, CBS 96-45-7, ETU 97-74-5, TMTM 102-06-7, N,N'-Diphenylguanidine 120-78-5, Dibenzothiazylidisulfide 137-26-8, TMTD 149-30-4, 2(3H)-Benzothiazolethione 4979-32-2 **10591-85-2**, Tetrabenzylthiuramdisulfide 17796-82-6, N-Cyclohexylthiophthalimide
 RL: MSC (Miscellaneous); POL (Pollutant); OCCU (Occurrence)
 (accelerator; environmental hazards by dumping **rubber** waste in unsealed landfill sites)
 IT 101-72-4, IPPD 106-50-3D, p-Phenylenediamine, diaryl derivs. 119-47-1 122-39-4D, Diphenylamine, octyl derives. 122-39-4D, Diphenylamine, styrene derivs. 128-37-0, BHT, occurrence 135-88-6, N-Phenyl-2-naphthylamine 147-47-7D, 1,2-Dihydro-2,2,4-trimethylquinoline, **polymers** 583-39-1, 2-Mercaptobenzimidazole 793-24-8 7152-24-1, 2-Methylmercaptobenzimidazole 84653-42-9

RE: MSC (Miscellaneous); POL (Pollutant); OCCU (Occurrence)
 (antioxidant; environmental hazards by dumping **rubber** waste
 in unsealed landfill sites)

IT 7439-92-1, Lead, occurrence 7440-48-4, Cobalt, occurrence 7440-66-6,
 Zinc, occurrence 30812-97-6
 RL: MSC (Miscellaneous); POL (Pollutant); OCCU (Occurrence)
 (environmental hazards by dumping **rubber** waste in unsealed
 landfill sites)

RE.CNT 7

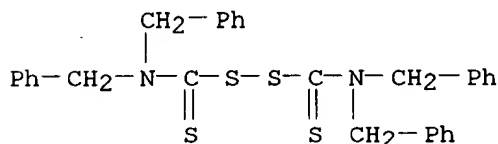
RE

(1) Lohwasser, H; Kautschuk + Gummi-Kunststoffe 42 1989
 (2) Lohwasser, H; Kautschuk + Gummi-Kunststoffe 44 1991
 (3) Lupfert, S; Kautschuk + Gummi-Kunststoffe 43 1990
 (4) Lupfert, S; Kautschuk + Gummi-Kunststoffe 44 1991
 (5) Schuster; Kautschuk + Gummi-Kunststoffe 44 1991
 (6) Stuurmann, H; KGK Kautschuk + Gummi-Kunststoffe 47 1994
 (7) Vohwinkel, K; Kautschuk + Gummi-Kunststoffe 44 1991

IT 10591-85-2, Tetrabenzylthiuramdisulfide
 RL: MSC (Miscellaneous); POL (Pollutant); OCCU (Occurrence)
 (accelerator; environmental hazards by dumping **rubber** waste
 in unsealed landfill sites)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 5 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1998:561317 HCAPLUS

DN 129:176789

TI Rubber composition for tire treads

IN Well, Michael

PA Continental A.-G., Germany

SO Eur. Pat. Appl., 6 pp.
 CODEN: EPXXDW

DT Patent

LA German

IC ICM C08K005-40
 ICS C08K003-36; C08K005-47; C08L021-00

CC 39-13 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 857751	A1	19980812	EP 1998-101609	19980130
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	DE 19704464	A1	19980813	DE 1997-19704464	19970206
	US 5905107	A	19990518	US 1998-18426	19980206
PRAI	DE 1997-19704464		19970206		
AB	A S-vulcanizable compn. suitable for extended-life tire treads comprises soln.-polymd. SBR 40-100, natural rubber and/or isoprene rubber 0-50, butadiene rubber 0-45, silica 50-80, carbon black 0-20, silanizing agent 3-7, tetrabenzylthiuram disulfide 0.1-0.5, N-cyclohexyl-2-benzothiazolesulfenamide 1-3 phr, and other conventional additives.				
ST	tire tread rubber compn				
IT	Tire treads (rubber compn. for tire treads with improved toughness and road life)				
IT	Butadiene rubber , uses Natural rubber , uses				

RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
 (rubber compn. for tire treads with improved toughness and road life)

IT Styrene-butadiene **rubber**, uses
 RL: DEV (Device component use); USES (Uses)
 (soln.-**polymd.**; **rubber** compn. for tire treads with improved toughness and road life)

IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (accelerator; **rubber** compn. for tire treads with improved toughness and road life)

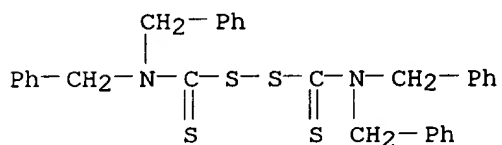
IT 9003-17-2
 RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
 (butadiene **rubber**, **rubber** compn. for tire treads with improved toughness and road life)

IT 9003-55-8
 RL: DEV (Device component use); USES (Uses)
 (styrene-butadiene **rubber**, soln.-**polymd.**; **rubber** compn. for tire treads with improved toughness and road life)

IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (accelerator; **rubber** compn. for tire treads with improved toughness and road life)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 6 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1998:238080 HCAPLUS

DN 128:258333

TI Improving wear resistance of truck treads

AU Hong, Sung W.; Ferrandino, Mark P.; Sanders, Juan A.

CS Uniroyal Chemical Co., USA

SO Rubber India (1997), 49(12), 9-15
 CODEN: RUIDA4; ISSN: 0035-9491

PB All India Rubber Industries Association

DT Journal

LA English

CC 39-14 (Synthetic Elastomers and Natural Rubber)

AB The optimum cure system which contains monosulfide (TBBS) and polysulfide (TBzTD) systems provides .apprx.14% better wear resistance than a conventional cure system in natural rubber truck tread. The replacement of oil with liq. polyisoprene provided a 10% redn. in DIN abrasion.

ST truck tire tread wear resistance; vulcanizing system natural rubber; liq polyisoprene additive tire tread

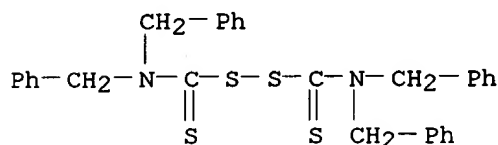
IT Natural **rubber**, properties
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (improvement of wear resistance of truck tire tread based on)

IT Abrasive wear
 (improvement of wear resistance of truck treads based on natural **rubber**)

IT Tires
 (treads; improvement of wear resistance of truck treads based on natural **rubber**)

IT Vulcanizing agents
 (vulcanizers for improvement of wear resistance of truck tire tread)

IT 9003-31-0, Polyisoprene
 RL: MOA (Modifier or additive use); USES (Uses)
 (liq.; additive for improvement of wear resistance of truck tire tread)
 IT 95-31-8 10591-85-2, Tetrabenzylthiuram disulfide
 RL: MOA (Modifier or additive use); USES (Uses)
 (vulcanizer for improvement of wear resistance of truck tire tread)
 IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: MOA (Modifier or additive use); USES (Uses)
 (vulcanizer for improvement of wear resistance of truck tire tread)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)

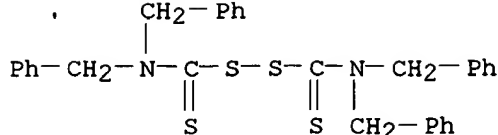


L10 ANSWER 7 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1998:8369 HCAPLUS
 DN 128:76487
 TI Rubber mixtures for treads and tires containing them
 IN Bertrand, Joachim; Soehnen, Dietmar
 PA Continental Aktiengesellschaft, Germany
 SO Ger. Offen., 4 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C08L021-00
 ICS C08L007-00; C08L009-00; C08K003-36; C08K003-04; B60C001-00;
 C08K005-09; C08K005-101; C08K005-39
 ICA C08L007-00; C08L019-00; C08L055-02; C08L009-02; C08L009-06
 ICI C08K003-36, C08K005-54
 CC 39-13 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19623346	A1	19971218	DE 1996-19623346	19960612
	EP 812879	A1	19971217	EP 1997-109290	19970609
	EP 812879	B1	19991222		
	R: DE, ES, FR, GB, IT, NL, PT, SI				
	ES 2142122	T3	20000401	ES 1997-109290	19970609
	CA 2207530	AA	19971212	CA 1997-2207530	19970610
	JP 10060171	A2	19980303	JP 1997-152567	19970610
	BR 9703538	A	19981006	BR 1997-3538	19970612
PRAI	DE 1996-19623346		19960612		

AB Sulfur-vulcanizable tire tread compns. comprise .gtoreq.1 diene elastomer 100, pptd. silica 5-100, 0-95 carbon black, abietic (I), dehydroabietic, tetrahydroabietic, and or dihydroabietic acid or deriv(s). 0.1-10, and ultra-accelerator [such as Zn dibenzyl dithiocarbamate (II) or tetrabenzylthiuram disulfide] 0.05-2 pphr in addn. to other conventional additives. The treads have good wet grip, low rolling resistance, and high wear resistance. An example based on a mixt. of natural, butadiene, and styrene-butadiene rubbers and contg. I and II provided a tread with better properties than one without I or II.
 ST tire tread rubber compn; abietic acid deriv tire tread compn; vulcanization accelerator tire tread compn
 IT Synthetic rubber, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (diene; in tire tread compns. with improved properties)

IT Butadiene **rubber**, uses
 Butyl **rubber**, uses
 Isoprene **rubber**, uses
 Natural **rubber**, uses
 Nitrile **rubber**, uses
 Styrene-butadiene **rubber**, uses
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (in tire tread compns. with improved properties)
 IT Carbon black, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (tire tread compns. with improved properties)
 IT Tires
 (treads; abietic acid derivs. and ultra-accelerators for sulfur-vulcanizable)
 IT Vulcanizing agents
 (ultra-accelerators; in tire tread compns. with improved properties)
 IT 9003-17-2
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (butadiene **rubber**, in tire tread compns. with improved properties)
 IT 9010-85-9
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (butyl **rubber**, in tire tread compns. with improved properties)
 IT 514-10-3, Abietic acid 1740-19-8, Dehydroabietic acid 2221-96-7,
 Dihydroabietic acid 17611-11-9, Dihydroabietic acid 17611-19-7,
 Dihydroabietic acid 19402-31-4, Dihydroabietic acid 19407-36-4,
 Dihydroabietic acid 19407-37-5, Dihydroabietic acid 25800-63-9,
 Tetrahydroabietic acid 27216-04-2, Dihydroabietic acid
 RL: MOA (Modifier or additive use); USES (Uses)
 (in tire tread compns. with improved properties)
 IT 9003-31-0
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (isoprene **rubber**, in tire tread compns. with improved properties)
 IT 9003-18-3
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (nitrile **rubber**, in tire tread compns. with improved properties)
 IT 7631-86-9, Silica, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (pptd.; tire tread compns. with improved properties)
 IT 9003-55-8
 RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
 (styrene-butadiene **rubber**, in tire tread compns. with improved properties)
 IT 10591-85-2, Tetrabenzylthiuram disulfide 14726-36-4, Zinc dibenzyl dithiocarbamate
 RL: CAT (Catalyst use); USES (Uses)
 (**vulcanization** accelerator; in tire tread compns. with improved properties)
 IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (**vulcanization** accelerator; in tire tread compns. with improved properties)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([$(\text{H}_2\text{N})\text{C}(\text{S})_2\text{S}_2$), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 8 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1997:719662 HCAPLUS

DN 127:359832

TI Sulfur-vulcanizable rubber compound containing cashew nut oil modified novolaks and bismaleimides

IN Maly, Neil Arthur; McGilvrey, John Robert

PA Goodyear Tire & Rubber Company, USA

SO U.S., 8 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM C08F008-00

NCL 525332500

CC 39-9 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5684091	A	19971104	US 1996-662093	19960612
AB	The title rubber compd. comprises: (a) natural rubber and/or a diene rubber, (b) 0.10-0.75 phr tetrabenzylthiuram disulfide, (c) 1-12 phr of a cashew nut oil modified novolak-type phenolic resin, (d) 0.5-3 phr of a bismaleimide, (e) 0.5-3 phr of a sulfenamide compd., and (f) 0.5-6 phr of sulfur, a sulfur donor and mixts. thereof. The compn. has good vulcanization properties and gives desirable final rubber vulcanizate phys. properties without generating undesirable nitrosamines and fumes during processing and cure.				
ST	sulfur vulcanizable rubber compn; cashew nut oil modified novolak rubber; sulfenamide rubber compn; bismaleimide rubber compn				
IT	Synthetic rubber , uses RL: POF (Polymer in formulation); USES (Uses) (acrylonitrile-isoprene; sulfur-vulcanizable rubber compd. contg. cashew nut oil modified novolaks and bismaleimides)				
IT	Synthetic rubber , uses RL: POF (Polymer in formulation); USES (Uses) (butadiene-isoprene-styrene; sulfur-vulcanizable rubber compd. contg. cashew nut oil modified novolaks and bismaleimides)				
IT	Synthetic rubber , uses RL: POF (Polymer in formulation); USES (Uses) (butadiene-isoprene; sulfur-vulcanizable rubber compd. contg. cashew nut oil modified novolaks and bismaleimides)				
IT	Novolaks RL: MOA (Modifier or additive use); USES (Uses) (cashew nut oil modified; sulfur-vulcanizable rubber compd. contg. cashew nut oil modified novolaks and bismaleimides)				
IT	Amides, uses Sulfenyl compounds RL: MOA (Modifier or additive use); USES (Uses) (sulfenamides; sulfur-vulcanizable rubber compd. contg. cashew nut oil modified novolaks and bismaleimides)				
IT	Belts Hoses Shoe soles Tires (sulfur-vulcanizable rubber compd. contg. cashew nut oil modified novolaks and bismaleimides)				
IT	Bismaleimide-based polyimides Polysulfides RL: MOA (Modifier or additive use); USES (Uses) (sulfur-vulcanizable rubber compd. contg. cashew nut oil				

IT Butadiene **rubber**, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (sulfur-vulcanizable **rubber** compd. contg. cashew nut oil
 modified novolaks and bismaleimides)

IT Natural **rubber**, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (sulfur-vulcanizable **rubber** compd. contg. cashew nut oil
 modified novolaks and bismaleimides)

IT Neoprene **rubber**, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (sulfur-vulcanizable **rubber** compd. contg. cashew nut oil
 modified novolaks and bismaleimides)

IT Nitrile **rubber**, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (sulfur-vulcanizable **rubber** compd. contg. cashew nut oil
 modified novolaks and bismaleimides)

IT Styrene-butadiene **rubber**, uses
 RL: POF (Polymer in formulation); USES (Uses)
 (sulfur-vulcanizable **rubber** compd. contg. cashew nut oil
 modified novolaks and bismaleimides)

IT cis-1,4-Isoprene **rubber**
 RL: POF (Polymer in formulation); USES (Uses)
 (sulfur-vulcanizable **rubber** compd. contg. cashew nut oil
 modified novolaks and bismaleimides)

IT 9003-17-2
 RL: POF (Polymer in formulation); USES (Uses)
 (butadiene **rubber**, sulfur-vulcanizable **rubber**
 compd. contg. cashew nut oil modified novolaks and bismaleimides)

IT 9010-98-4
 RL: POF (Polymer in formulation); USES (Uses)
 (neoprene **rubber**, sulfur-vulcanizable **rubber** compd.
 contg. cashew nut oil modified novolaks and bismaleimides)

IT 9003-18-3
 RL: POF (Polymer in formulation); USES (Uses)
 (nitrile **rubber**, sulfur-vulcanizable **rubber** compd.
 contg. cashew nut oil modified novolaks and bismaleimides)

IT 25014-11-3, Acrylonitrile-isoprene copolymer 25102-52-7,
 Butadiene-isoprene copolymer 26602-62-0, Butadiene-isoprene-styrene
 copolymer
 RL: POF (Polymer in formulation); USES (Uses)
 (**rubber**; sulfur-vulcanizable **rubber** compd. contg.
 cashew nut oil modified novolaks and bismaleimides)

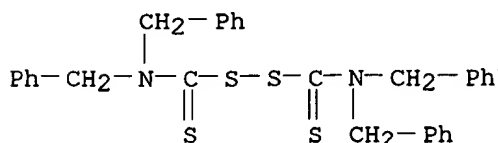
IT 9003-55-8
 RL: POF (Polymer in formulation); USES (Uses)
 (styrene-butadiene **rubber**, sulfur-vulcanizable **rubber**
 compd. contg. cashew nut oil modified novolaks and bismaleimides)

IT 95-31-8, N-tert-Butyl-2-benzothiazylsulfenamide 95-33-0,
 N-Cyclohexyl-2-benzothiazylsulfenamide 3006-93-7, N,N'-(m-
 Phenylene)bismaleimide 3278-31-7, N,N'-(p-Phenylene)-bismaleimide
 3741-80-8 4856-87-5, N,N'-Hexamethylenebismaleimide 4979-32-2,
 N,N-Dicyclohexyl-2-benzothiazylsulfenamide 5132-30-9,
 N,N'-Ethylenebismaleimide 7704-34-9, Sulfur, uses 10220-34-5,
 N-Isopropyl-2-benzothiazylsulfenamide 10591-85-2,
 Tetrabenzylthiuram disulfide 13132-94-0, N,N'-(Oxydi-p-
 phenylene)bismaleimide 13676-54-5 109835-38-3 109901-73-7
 119462-56-5, N,N'-m-Xylylene-bis-citraconic imide
 RL: MOA (Modifier or additive use); USES (Uses)
 (sulfur-vulcanizable **rubber** compd. contg. cashew
 nut oil modified novolaks and bismaleimides)

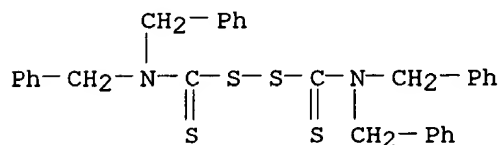
IT 9003-31-0
 RL: POF (Polymer in formulation); USES (Uses)
 (cis-1,4-Isoprene **rubber**, sulfur-vulcanizable **rubber**
 compd. contg. cashew nut oil modified novolaks and bismaleimides)

IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: MOA (Modifier or additive use); USES (Uses)
 (sulfur-vulcanizable **rubber** compd. contg. cashew

RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 9 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1997:695777 HCAPLUS
 DN 127:319910
 TI Improving wear resistance of truck treads
 AU Hong, Sung W.; Ferrandino, Mark P.; Sanders, Juan A.
 CS Uniroyal Chemical Co., USA
 SO Rubber World (1997), 216(6), 33-37
 CODEN: RUBWAQ; ISSN: 0035-9572
 PB Lippincott & Peto, Inc.
 DT Journal
 LA English
 CC 39-9 (Synthetic Elastomers and Natural Rubber)
 AB Tetrabenzylthiuram disulfide is used as an accelerator for curing rubber.
 It is used with N-t-butyl-2-benzothiazole sulfenamide.
 ST tetrabenzylthiuram disulfide vulcanization accelerator rubber; natural
 rubber tire wear resistance
 IT Tires
 Vulcanizing agents
 Wear
 (improving wear resistance of truck treads using tetrabenzylthiuram
 disulfide vulcanization accelerators)
 IT Natural **rubber**, properties
 RL: NUU (Nonbiological use, unclassified); PRP (Properties); RCT
 (Reactant); USES (Uses)
 (improving wear resistance of truck treads using tetrabenzylthiuram
 disulfide vulcanization accelerators)
 IT 95-31-8, N-tert-Butyl-2-benzothiazole sulfenamide **10591-85-2**,
 Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (improving wear resistance of truck treads using tetrabenzylthiuram
 disulfide **vulcanization** accelerators)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (improving wear resistance of truck treads using tetrabenzylthiuram
 disulfide **vulcanization** accelerators)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 10 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1997:140276 HCAPLUS
 DN 126:145173
 TI Recycling of hardened polysulfide and/or polymercaptan adhesives and
 sealants and products therefrom

PA Teroson GmbH, Germany; Grimm, Stefan; Pressel, Karl-Heinz; Proebster, Manfred
 SO PCT Int. Appl., 22 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 IC ICM C08J011-28
 ICI C08L081-04
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 39, 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9700283	A1	19970103	WO 1996-EP2488	19960607
	W: AU, BY, CA, CN, CZ, HU, JP, KR, NO, PL, RU, TR, UA, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	DE 19521671	C1	19970918	DE 1995-19521671	19950614
	CA 2224390	AA	19970103	CA 1996-2224390	19960607
	AU 9662237	A1	19970115	AU 1996-62237	19960607
	EP 832154	A1	19980401	EP 1996-920809	19960607
	R: AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE, IE				
	JP 11510832	T2	19990921	JP 1996-502604	19960607
	ZA 9605040	A	19961217	ZA 1996-5040	19960613
	NO 9704668	A	19971009	NO 1997-4668	19971009
PRAI	DE 1995-19521671		19950614		
	WO 1996-EP2488		19960607		
AB	Processing is carried out in a nonvolatile liq., with the addn. of a depolymn. agent, preferably a S-based vulcanization accelerator known from rubber technol. The depolymerizate can be added in high proportions to the hardener component of two-component polysulfide and/or polymercaptan adhesives, sealants or coating materials without substantially modifying its hardening characteristics or properties concerning stability during storage. The depolymn. agents may be in the form of thiazoles, thiurams, dithiocarbamates, dithiocarbamylsulfenamides, xanthates, S-contg. triazines, thioureas, etc. Examples were provided based on hardened Terostat 998R compns.				
ST	polysulfide recycling depolymn adhesive sealant; rubber polysulfide depolymn recycling; polymercaptan depolymn recycling				
IT	Sealing compositions				
	(2-component; recycling of hardened polysulfides and/or polymercaptans by depolymn. for)				
IT	Depolymerization				
	(agents; in recycling of hardened polysulfides and/or polymercaptans)				
IT	Recycling of polymeric materials				
	(by depolymn. of hardened polysulfides and/or polymercaptans)				
IT	Crosslinking agents				
	Crosslinking catalysts				
	Plasticizers				
	Vulcanizing agents				
	(in recycling of hardened polysulfides and/or polymercaptans by depolymn.)				
IT	Thiols (organic), uses				
	RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)				
	(polythiols, polymers ; recycling of hardened polysulfides and/or polymercaptans by depolymn.)				
IT	Polysulfide rubber				
	Polysulfides				
	RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)				
	(recycling of hardened polysulfides and/or polymercaptans by depolymn.)				
IT	Two-component adhesives				
	(recycling of hardened polysulfides and/or polymercaptans by depolymn. for)				

IT 110 47-5D, Chitosan, salts
 RL: CAT (Catalyst use); NUU (Nonbiological use, unclassified); USES (Uses)
 (hexavalent; in recycling of hardened polysulfides and/or
polymercaptans by depolymn.)

IT 62-56-6D, Thiourea, derivs. 80-70-6 128-04-1, Sodium
 dimethyldithiocarbamate 136-23-2, Zinc dibutyldithiocarbamate
 137-26-8, Tetramethyl thiuram disulfide 288-47-1D, Thiazole, derivs.
 1309-60-0, Lead dioxide 1313-13-9, Manganese dioxide, uses
10591-85-2, Tetrabenzyl thiuram disulfide 14726-36-4, Zinc
 dibenzylthiocarbamate
 RL: CAT (Catalyst use); NUU (Nonbiological use, unclassified); USES (Uses)
 (in recycling of hardened polysulfides and/or **polymercaptans**
 by depolymn.)

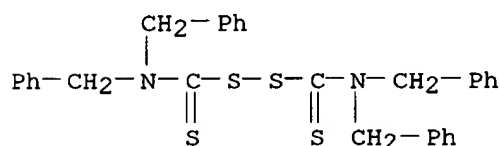
IT 85-68-7, Benzyl butyl phthalate
 RL: MOA (Modifier or additive use); USES (Uses)
 (in recycling of hardened polysulfides and/or **polymercaptans**
 by depolymn.)

IT 160477-48-5, Terostat 998R
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or
 engineered material use); PROC (Process); USES (Uses)
 (recycling of hardened polysulfides and/or **polymercaptans** by
 depolymn.)

IT **10591-85-2**, Tetrabenzyl thiuram disulfide
 RL: CAT (Catalyst use); NUU (Nonbiological use, unclassified); USES (Uses)
 (in recycling of hardened polysulfides and/or **polymercaptans**
 by depolymn.)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 11 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1997:130004 HCAPLUS

DN 126:132560

TI A sulfur-vulcanizable rubber compound and accelerator combination for
 rubbers

IN Maly, Neil Arthur; McGilvrey, John Robert

PA Goodyear Tire and Rubber Co., USA

SO Eur. Pat. Appl., 16 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C08K005-47

ICS C08K005-3415; C08K005-40; C08L021-00

CC 39-10 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 751178	A1	19970102	EP 1996-109927	19960620
	EP 751178	B1	19990908		
	R: BE, DE, ES, FR, GB, IT, NL				
	CA 2162457	AA	19961227	CA 1995-2162457	19951108
	ES 2136348	T3	19991116	ES 1996-109927	19960620
	JP 09012778	A2	19970114	JP 1996-164497	19960625
PRAI	US 1995-502		19950626		

AB The combination of tetrabenzylthiuram disulfide, cashew nut oil-modified
 novolak phenolic resin, a bismaleimide compd., and a sulfenamide compd.
 results in desirable final rubber vulcanizate phys. properties without
 generating undesirable nitrosamines and fumes during processing and cure.

A sulfur-vulcanizable polyisoprene rubber, BSR compn. contained in 9003-8, N-tert-butyl-2-benzothiazylsulfenamide, N,N'-(m-phenylene)bismaleimide, and tetrabenzylthiuram disulfide accelerator and its vulcanizate showed tensile strength 16.6 MPa, elongation at break 342%, Shore A hardness 93, at stress strain 40 min/135.degree. for unaged samples and T90 87.5 min.

ST nitrosamine free vulcanization accelerator rubber; vulcanization accelerator combination rubber; isoprene rubber vulcanization accelerator; sulfenamide vulcanization accelerator rubber; cashew modified phenolic vulcanization accelerator; bismaleimide vulcanization accelerator rubber; tetrabenzylthiuram vulcanization accelerator rubber

IT Belts
Hoses
Shoe soles
Tires
Vulcanizing agents
(a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

IT Butadiene **rubber**, uses
Isoprene **rubber**, uses
Natural **rubber**, uses
Neoprene **rubber**, uses
Nitrile **rubber**, uses
Styrene-butadiene **rubber**, uses
cis-1,4-Isoprene **rubber**
RL: POF (Polymer in formulation); USES (Uses)
(a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

IT Synthetic **rubber**, uses
RL: POF (Polymer in formulation); USES (Uses)
(acrylonitrile-isoprene; a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

IT Novolaks
RL: CAT (Catalyst use); USES (Uses)
(cashew modified; a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

IT 95-31-8, N-tert-Butyl-bis-(2-benzothiazylsulfenamide) 95-33-0
3006-93-7, N,N'-(m-Phenylene)bismaleimide 3278-31-7 4856-87-5,
N,N'-Hexamethylene bismaleimide 4979-32-2, N,N-Dicyclohexyl-2-benzothiazole sulfenamide 5132-30-9, N,N'-Ethylene bismaleimide 10220-34-5, N-Isopropyl-2-benzothiazylsulfenamide **10591-85-2**,
Tetrabenzylthiuram disulfide 13132-94-0, N,N'-(Oxydi-p-phenylene)bismaleimide 13676-54-5 39594-44-0 73046-18-1
109835-38-3 137012-56-7, SP 6700
RL: CAT (Catalyst use); USES (Uses)
(a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

IT 9003-17-2
RL: POF (Polymer in formulation); USES (Uses)
(butadiene **rubber**, a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

IT 9003-31-0
RL: POF (Polymer in formulation); USES (Uses)
(isoprene **rubber**, a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

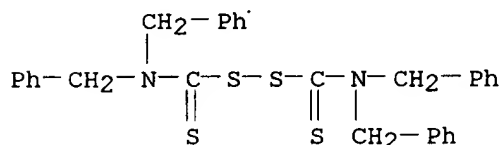
IT 9010-98-4
RL: POF (Polymer in formulation); USES (Uses)
(neoprene **rubber**, a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

IT 9003-18-3
RL: POF (Polymer in formulation); USES (Uses)
(nitrile **rubber**, a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

IT 25014-11-3, Acrylonitrile-isoprene copolymer
RL: POF (Polymer in formulation); USES (Uses)
(**rubber**; a sulfur-vulcanizable **rubber** compd. and accelerator combination for **rubbers**)

IT 17796-82-6, N-Cyclohexylthiophthalimide

(scorch inhibitor; a sulfur-vulcanizable **rubber** compd. and
 accelerator combination for **rubbers**)
 IT 9003-55-8
 RL: POF (Polymer in formulation); USES (Uses)
 (styrene-butadiene **rubber**, a sulfur-vulcanizable
rubber compd. and accelerator combination for **rubbers**
)
 IT 9003-31-0
 RL: POF (Polymer in formulation); USES (Uses)
 (cis-1,4-Isoprene **rubber**, a sulfur-vulcanizable
rubber compd. and accelerator combination for **rubbers**
)
 IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (a sulfur-**vulcanizable rubber** compd. and
 accelerator combination for **rubbers**)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H₂N)C(S)]₂S₂), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 12 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1997:101669 HCAPLUS
 DN 126:105318
 TI Improvements in reclaiming of natural and synthetic rubbers
 IN Sekhar, Tan Sri Balachandra Chakkinggal; Subramaniam, Anantakrishnan
 PA Sti-K Polymers Sdn Bhd, Malay.
 SO Eur. Pat. Appl., 9 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM C08J011-28
 ICS C08K005-5398; C08L021-00
 CC 39-9 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 748837	A1	19961218	EP 1995-309424	19951222

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
 PRAI MY 1995-9501624 19950615
 AB A process of recycling used sulfur-cured elastomeric materials comprises masticating the elastomeric materials at temps. preferably below 50.degree.C with a novel chem. mixt. which is capable in a controlled manner of opening up or delinking the vulcanized network of the elastomeric materials. The novel chem. mixt. is made from the zinc salt of dialkyl dithiophosphates and mercaptobenzothiazole or other accelerators in the molar ratio for example in the range of 1:1 to 1:12 dispersed in diols and in the presence of zinc oxide and stearic acid. This mixt., when blended with tire crumbs or any other vulcanized crumbs in concns. of 6 parts binder per 100 parts of rubber crumbs on a mill, effectively delinks the vulcanized network and renders the compd. ready for molding and vulcanization without the need for further crosslinking chems. The total milling period, which occurs at temps. preferably below 50.degree.C, takes only 7 to 10 min. Alternatively, the binder and tire crumbs could be first mixed in an intermix and subsequently milled in an open mill. The obtained recycled rubber compds. display satisfactory levels of phys. and dynamic characteristics. Such compds. can be directly used in molded goods or in admixt. with fresh compds. in tires and related

ST reclaiming waste tire zinc salt; stearic acid reclaiming waste tire; oxide
zinc reclaiming waste tire; mercaptobenzothiazole reclaiming waste tire;
alkyl dithiophosphate salt reclaiming waste tire

IT Mats
(automotive, uses; reclaiming waste tires with compns. contg. zinc
alkyl dithiophosphates, vulcanization accelerators, zinc oxide, and
fatty acids)

IT Automobiles
(mats, uses; reclaiming waste tires with compns. contg. zinc alkyl
dithiophosphates, vulcanization accelerators, zinc oxide, and fatty
acids)

IT Recycling of **polymeric** materials
Vulcanizing agents
(reclaiming waste **rubber** articles with compns. contg. zinc
alkyl dithiophosphates, vulcanization accelerators, zinc oxide, and
fatty acids)

IT Fatty acids, uses
RL: CAT (Catalyst use); USES (Uses)
(reclaiming waste **rubber** articles with compns. contg. zinc
alkyl dithiophosphates, vulcanization accelerators, zinc oxide, and
fatty acids)

IT Tires
(scrap; reclaiming waste **rubber** articles with compns. contg.
zinc alkyl dithiophosphates, vulcanization accelerators, zinc oxide,
and fatty acids)

IT Tubes
(tire, uses; reclaiming waste tires with compns. contg. zinc alkyl
dithiophosphates, vulcanization accelerators, zinc oxide, and fatty
acids)

IT Carpet backings
Electric insulators
Tires
(uses; reclaiming waste tires with compns. contg. zinc alkyl
dithiophosphates, vulcanization accelerators, zinc oxide, and fatty
acids)

IT Natural **rubber**, reactions
Synthetic **rubber**, reactions
RL: RCT (Reactant)
(waste; reclaiming waste tires with compns. contg. zinc alkyl
dithiophosphates, vulcanization accelerators, zinc oxide, and fatty
acids)

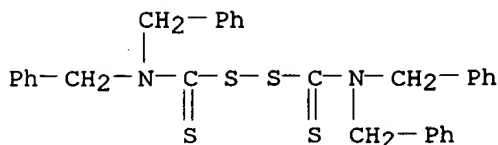
IT 57-11-4, Octadecanoic acid, uses 95-31-8, N-tert-Butyl-2-
benzothiazolesulfenamide 95-33-0, N-Cyclohexyl-2-
benzothiazolesulfenamide 97-77-8, Tetraethylthiuram disulfide 103-34-4
120-78-5, Benzothiazyl disulfide 137-26-8, Tetramethylthiuram disulfide
155-04-4, Zinc mercaptobenzothiazole 1314-13-2, Zinc oxide, uses
10591-85-2, Tetrabenzylthiuram disulfide
RL: CAT (Catalyst use); USES (Uses)
(reclaiming waste **rubber** articles with compns. contg. zinc
alkyl dithiophosphates, **vulcanization** accelerators, zinc
oxide, and fatty acids)

IT 149-30-4, 2-Mercaptobenzothiazole 6990-43-8, Zinc dibutyl
dithiophosphate
RL: RCT (Reactant)
(reclaiming waste **rubber** articles with compns. contg. zinc
alkyl dithiophosphates, vulcanization accelerators, zinc oxide, and
fatty acids)

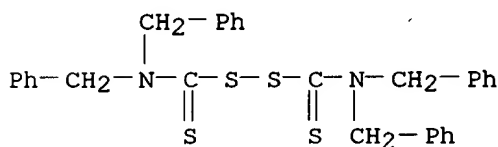
IT **10591-85-2**, Tetrabenzylthiuram disulfide
RL: CAT (Catalyst use); USES (Uses)
(reclaiming waste **rubber** articles with compns. contg. zinc
alkyl dithiophosphates, **vulcanization** accelerators, zinc
oxide, and fatty acids)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([$(\text{H}_2\text{N})\text{C}(\text{S})_2\text{S}_2$), tetrakis(phenylmethyl)-
(9CI) (CA INDEX NAME)



L10 ANSWER 13 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1996:475826 HCAPLUS
 DN 125:170575
 TI TBzTD: a secondary accelerator for stable crosslink systems in tire applications
 AU Ferrandino, Mark P.; Sanders, Juan A.; Hong, Sung W.
 CS Uniroyal Chemical, USA
 SO Rubber World (1996), 214(3), 33-36, 50-52
 CODEN: RUBWAQ; ISSN: 0035-9572
 DT Journal
 LA English
 CC 39-13 (Synthetic Elastomers and Natural Rubber)
 AB Tetrabenzylthiuram disulfide (TBzTD, 0.25 to 0.50 phr)/N-tert-butyl-2-benzothiazole-2-sulfenamide (1.0-1.25 phr) system provided a powerful tool in application requiring scorch safety, efficient cure and nitrosamine safety. The addn. of low levels of TBzTD to sulfenamide improved cure efficiency with little affecting on the flex property.
 ST benzylthiuram disulfide accelerator natural rubber tire; safety accelerator benzylthiuram disulfide NR vulcanization
 IT Tires
 Vulcanization accelerators and agents
 (tetrabenzylthiuram disulfide as secondary accelerator for stable crosslink systems in tire applications)
 IT **Rubber**, natural, properties
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); PROC (Process); USES (Uses)
 (tetrabenzylthiuram disulfide as secondary accelerator for stable crosslink systems in tire applications)
 IT 95-31-8, N-tert-Butyl-2-benzothiazolesulfenamide
 RL: CAT (Catalyst use); USES (Uses)
 (in tetrabenzylthiuram disulfide as secondary accelerator for stable crosslink systems in tire applications)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (tetrabenzylthiuram disulfide as secondary accelerator for stable crosslink systems in tire applications)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (tetrabenzylthiuram disulfide as secondary accelerator for stable crosslink systems in tire applications)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 14 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1996:237515 HCAPLUS
 DN 124:263213
 TI Vulcanizable rubber compositions free of carcinogenic nitrosamine precursors and suitable as joining materials

PA Michelin et Cie., Fr.
 SO Eur. Pat. Appl., 18 pp.
 CODEN: EPXXDW
 DT Patent
 LA French
 IC ICM C08K005-40
 ICS C08K005-39; C08L021-00; B29D030-56
 CC 39-13 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 695780	A1	19960207	EP 1995-111392	19950720
	R: BE, DE, ES, FR, GB, IT, SE				
	FR 2723374	A1	19960209	FR 1994-9740	19940803
	AU 9528310	A1	19960215	AU 1995-28310	19950801
	ZA 9506444	A	19960322	ZA 1995-6444	19950802
	BR 9503527	A	19960416	BR 1995-3527	19950802
	JP 08059898	A2	19960305	JP 1995-198276	19950803
	CN 1120559	A	19960417	CN 1995-108666	19950803
PRAI	FR 1994-9740		19940803		

AB The title compns., esp. useful for tire repair and retreading, contain a rubber (e.g., natural rubber or SBR) and a vulcanizing system comprising S, .gtoreq.1 accelerator selected from MBTS and 2-mercaptobenzothiazole, .gtoreq.1 accelerator selected from tetrabenzylthiuram disulfide and Zn dibenzylidithiocarbamate, and .gtoreq.1 activator selected from amines, guanidines [e.g., (PhNH)2C:NH], aldehyde-amine condensates (e.g., PhN:CHPr), and quaternary ammonium salts (e.g., Aliquat 336).

ST zinc dibenzylidithiocarbamate vulcanization nitrosamine avoidance; tetrabenzylthiuram disulfide vulcanization nitrosamine avoidance; mercaptobenzothiazole vulcanization nitrosamine avoidance; benzothiazyl disulfide vulcanization nitrosamine avoidance; tire repair retreading vulcanization nitrosamine avoidance; adhesive rubber vulcanization accelerator nitrosamine avoidance

IT **Rubber**, butadiene-styrene, uses

Rubber, natural, uses

RL: NUU (Nonbiological use, unclassified); POF (Polymer in formulation); USES (Uses)

(in vulcanizable compns. free of nitrosamine precursors for bonding **rubber** surfaces together)

IT Vulcanization accelerators and agents

(in vulcanizable **rubber** compns. free of nitrosamine precursors for bonding **rubber** surfaces together)

IT Tires

(vulcanizable **rubber** compns. free of nitrosamine precursors for bonding **rubber** surfaces during repair and retreading of)

IT Adhesives

(vulcanizable **rubber** compns. free of nitrosamine precursors for bonding **rubber** surfaces together)

IT Amines, miscellaneous

RL: MSC (Miscellaneous)

(N-nitroso, vulcanizable **rubber** compns. free of nitrosamine precursors for bonding **rubber** surfaces together)

IT Quaternary ammonium compounds, uses

RL: MOA (Modifier or additive use); USES (Uses)

(tri-C8-10-alkylmethyl, chlorides, in vulcanizable **rubber** compns. free of nitrosamine precursors for bonding **rubber** surfaces together)

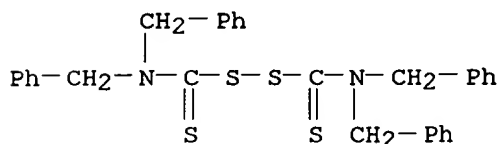
IT 102-06-7, Diphenylguanidine 120-78-5, Mbts 149-30-4, 2-Mercaptobenzothiazole 4275-07-4, N-Butylideneaniline 5137-55-3, Methyltrioctylammonium chloride 7704-34-9, Crystex, uses **10591-85-2**, Tetrabenzylthiuram disulfide 14726-36-4, Zinc dibenzylidithiocarbamate

RL: MOA (Modifier or additive use); USES (Uses)

(in vulcanizable **rubber** compns. free of nitrosamine precursors for bonding **rubber** surfaces together)

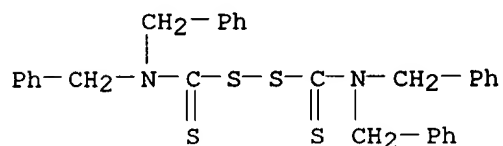
IT 9003-55-8

RL: NOC (Nonbiological use, unclassified); FOR (Polymer in Formulation);
 USES (Uses)
 (rubber, in vulcanizable compns. free of nitrosamine
 precursors for bonding rubber surfaces together)
 IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: MOA (Modifier or additive use); USES (Uses)
 (in vulcanizable rubber compns. free of nitrosamine
 precursors for bonding rubber surfaces together)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 15 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1996:231022 HCAPLUS
 DN 124:263134
 TI Studies on the effect of thiuram disulfide on NR vulcanization accelerated
 by thiazole-based accelerator systems
 AU Debnath, Subhas Chandra; Basu, Dipak Kumar
 CS Polymer Sci. Unit, Indian Assoc. Cultivation Sci., Calcutta, 700 032,
 India
 SO J. Appl. Polym. Sci. (1996), 60(6), 845-55
 CODEN: JAPNAB; ISSN: 0021-8995
 DT Journal
 LA English
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 AB Thiuram disulfides form synergistic combinations with thiazole and
 thiazole-based accelerators, namely, N-cyclohexyl-2-benzothiazole
 sulfenamide (CBS), 2-mercaptobenzothiazole (MBT), and 2-
 mercaptobenzothiazyl disulfide (MBTS). Unfortunately, widely used thiuram
 disulfides (TD) generate carcinogenic N-nitrosoamine. It is reported that
 the nitrosamines from N-methylpiperazine and dibenzylamine are free from
 this menace. Some investigations were carried out with the binary
 combinations of each of bis(N-methylpiperazino)thiuram disulfide (MPTD),
 tetrabenzylthiuram disulfide (TBzTD), and tetramethylthiuram disulfide
 (TMTD) sep. with CBS, MBT, and MBTS. It was obsd. that all the TD are
 activated by the CBS, MBT or MBTS in the combinations studied. The
 intensity of activation is manifested in the enhancement of torque,
 modulus, tensile strength, cure rate, hardness, and decrease of elongation
 at break values and is very much dependent upon the ratio of the
 accelerators used. Considering the torque, modulus, tensile strength, and
 the elongation at break, it appears the MPTD and TBzTD are capable of
 competing with the hitherto unbeaten TMTD as suitable accelerators for the
 vulcanization of rubber. Some investigations in respect to heat- and
 age-resistance behavior have also been carried out and the obsd.
 differences in the activities of various binary combinations have been
 explained through a mechanism. The results obtained with filled
 vulcanizates indicate that the binary systems comprising TD and MBTS
 provide fruitful results of which the TBzTD-MBTs combination seems to give
 the best cure and phys. data for practical vulcanizates.
 ST natural rubber vulcanization thiuram disulfide
 IT Vulcanization accelerators and agents
 (effects of thiuram disulfide on NR vulcanization accelerated by
 thiazole-based accelerators)
 IT Rubber, natural, properties
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT
 (Reactant); PROC (Process)
 (effects of thiuram disulfide on NR vulcanization accelerated by
 thiazole-based accelerators)

11, 95-33-0, N-Cyclohexyl-2-benzothiazole sulfenamide 105-45-1,
 Dibenzylamine 109-01-3, N-Methylpiperazine 120-78-5 137-26-8,
 Tetramethylthiuram disulfide 149-30-4, 2-Mercaptobenzothiazole
10591-85-2, Tetrabenzylthiuram disulfide 20231-01-0
 RL: NUU (Nonbiological use, unclassified); PEP (Physical, engineering or
 chemical process); PRP (Properties); RCT (Reactant); PROC (Process); USES
 (Uses)
 (effects of thiuram disulfide on NR **vulcanization** accelerated
 by thiazole-based accelerators)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: NUU (Nonbiological use, unclassified); PEP (Physical, engineering or
 chemical process); PRP (Properties); RCT (Reactant); PROC (Process); USES
 (Uses)
 (effects of thiuram disulfide on NR **vulcanization** accelerated
 by thiazole-based accelerators)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 16 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1996:209719 HCAPLUS
 DN 124:234673
 TI Rubber compositions with vibration-damping and low heat-buildup ability
 IN Ariga, Nozomi; Kobayashi, Yukio; Taichi, Shigemitsu; Oohara, Masaki;
 Yamamoto, Yoshikimi
 PA Ouchi Shinko Kagaku Kogyo Kk, Japan
 SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C08L021-00
 ICS C08K005-39; C08K005-40; C08K005-57
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08020675	A2	19960123	JP 1994-184208	19940704
OS	MARPAT 124:234673				
AB	Title compns. contain thiurams (R1R2NCS)2Sx [R1, R2 = Ph, benzyl, C1-18 linear, branched, or cyclic alkyl, C5-8 alicyclic group residues or heterocyclic (other than N) residues; x = 1-6] 0.1-5.0, dialkyltin oxides (R3R4SnO)n (R3, R4 = C1-8 alkyl, n .gtoreq.1 integers) 0.1-5.0, and/or Zn dithiocarbamates 0.1-5.0 phr. A natural rubber compn. contg. S 2, tetrastearylthiuram disulfide 2.38, and polymeric dioctyltin oxide 0.98 phr was vulcanized at 150.degree. for 10 min to form a product with a 23.degree. tan.delta. of 0.0610 and ration of dynamic modulus at 100 Hz and 1 Hz of 1.040.				
ST	thiuram sulfide vulcanizer; dialkyltin oxide vulcanizer; zinc dithiocarbamate vulcanizer; heat buildup redn vulcanizer; vibration damper rubber vulcanizer				
IT	Sulfides, uses RL: CAT (Catalyst use); USES (Uses) (mono- or poly-; rubber compns. with vibration-damping and low heat-buildup ability)				
IT	Rubber , butadiene-styrene, properties Rubber , natural, properties RL: PRP (Properties) (thiuram sulfide- and/or zinc dithiocarbamate- and/or (

polymeric) dialkyltin oxides for **rubber** compns. with vibration-damping and low heat-buildup ability)

IT Vulcanization accelerators and agents
(thiuram sulfides and/or zinc dithiocarbamates and/or (polymeric) dialkyltin oxides for **rubber** compns. with vibration-damping and low heat-buildup ability)

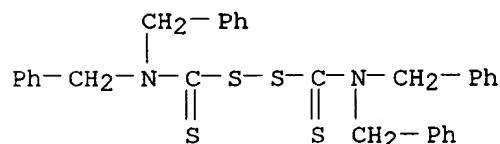
IT 97-74-5, Tetramethylthiuram monosulfide 97-77-8, Tetraethylthiuram disulfide 136-23-2, Zinc dibutyldithiocarbamate 137-26-8 818-08-6 1634-02-2, Tetrabutylthiuram disulfide **10591-85-2**, Tetrabenzyl thiuram disulfide 13878-54-1 27517-48-2 37437-21-1, Tetrakis(2-ethylhexyl)thiuram disulfide 41365-24-6 62652-50-0, Tetrahexylthiuram disulfide 70605-35-5 175079-40-0
RL: CAT (Catalyst use); USES (Uses)
(**rubber** compns. with vibration-damping and low heat-buildup ability)

IT 9003-55-8
RL: PRP (Properties)
(**rubber**, thiuram sulfide- and/or zinc dithiocarbamate- and/or (polymeric) dialkyltin oxide-contg. compns. with vibration-damping and low heat-buildup ability)

IT **10591-85-2**, Tetrabenzyl thiuram disulfide
RL: CAT (Catalyst use); USES (Uses)
(**rubber** compns. with vibration-damping and low heat-buildup ability)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([$(\text{H}_2\text{N})\text{C}(\text{S})_2\text{S}_2$), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER (17) OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1996:135728 HCAPLUS

DN 124:178294

TI Improvements in and relating to the reclaiming of natural and synthetic rubbers

IN Sekhar, Chakkingal; Kormer, Vitaly Abramovich

PA B.C. Sekhar SDN BHD, Malay.

SO Eur. Pat. Appl., 11 pp.
CODEN: EPXXDW

DT Patent

LA English

IC ICM C08J011-10
ICS C08J011-28

ICI C08L021-00

CC 38-2 (Plastics Fabrication and Uses)
Section cross-reference(s): 39

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 690091	A1	19960103	EP 1995-301399	19950303
	EP 690091	B1	19990915		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	CA 2134186	AA	19951226	CA 1994-2134186	19941024
	CN 1118791	A	19960320	CN 1994-113887	19941103
	AT 184618	E	19991015	AT 1995-301399	19950303
	ES 2139837	T3	20000216	ES 1995-301399	19950303
	JP 08041107	A2	19960213	JP 1995-149025	19950615
	FI 9503036	A	19951226	FI 1995-3036	19950620
	RO 113738	B1	19981030	RO 1995-1176	19950622
	DK 9500720	A	19951226	DK 1995-720	19950623

NO	75207	NO	1995-11-1	NO	1995-11-1
HU	214782	B	19980528		
CA	2152641	AA	19951226	CA 1995-2152641	19950626
AU	9523270	A1	19960111	AU 1995-23270	19950626
AU	696872	B2	19980917		
BR	9502937	A	19960312	BR 1995-2937	19950626
CN	1127271	A	19960724	CN 1995-109174	19950626
ZA	9505284	A	19961227	ZA 1995-5284	19950626

PRAI MY 1994-9401654 19940625
EP 1994-306799 19940916
EP 1995-301399 19950303

AB A process of recyclinig used sulfur-cured elastomeric materials comprises masticating the elastomeric materials at <50.degree. with a novel chem. mixt. which is capable of initiation proton exchange in a controlled manner and thereby open up to delink the vulcanized network of the elastomeric materials. The novel chem. mixt. is made from the zinc salt of dimethyldithiocarbamate and mercaptobenzothiazole in the molar ratio of 1:(1-12) dispersed in diols and in the presence of stearic acid, zinc oxide and sulfur. This mixt., when blended with tire crumbs or any other vulcanized crumbs in concns. of 6 parts binder per 100 parts of rubber crumbs on a mill effectively delinks the vulcanized network and renders the compd. ready for molding and vulcanization. The total milling period, which occurs at <50.degree., takes only 7-10 min. Alternatively, the binder and tire crumbs could be first mixed in an intermix and subsequently milled in an open mill. The obtained recycled rubber compds. display satisfactory levels of phys. and dynamic characteristics. Such compds. can be directly used in molded goods or in admixt. with fresh compds. in tires and related areas.

ST sulfur cured reclaimed rubber; natural rubber recycling; synthetic rubber recycling; delinking compn vulcanized rubber

IT Recycling of plastics and **rubbers**
Tires
(improvements in reclaiming of natural and synthetic **rubbers**)

IT **Rubber**, natural, preparation
Rubber, synthetic
RL: PUR (Purification or recovery); PREP (Preparation)
(improvements in reclaiming of natural and synthetic **rubbers**)

IT Vulcanization accelerators and agents
(de-, **rubber**; improvements in reclaiming of natural and synthetic **rubbers**)

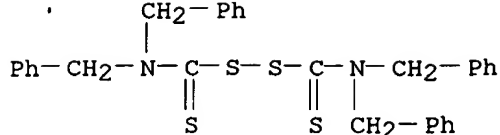
IT 95-31-8, N-tert-Butyl-2-benzothiazole sulfenamide 95-33-0,
N-Cyclohexyl-2-benzothiazole sulfenamide 97-39-2, Di-o-tolylguanidine
97-77-8, Tetraethylthiuram disulfide 102-06-7, N,N'-Diphenylguanidine
103-34-4 120-78-5, Benzothiazyl disulfide 136-23-2, Zinc
dibutyldithiocarbamate 137-26-8, Tetramethylthiuram disulfide
137-30-4, Zinc dimethyldithiocarbamate 149-30-4, 2-Mercaptobenzothiazole
10591-85-2, Tetrabenzylthiuram disulfide 14324-55-1, Zinc
diethyldithiocarbamate 14726-36-4, Zinc dibenzylthiocarbamate
15694-56-1, Zinc dipropyldithiocarbamate
RL: CAT (Catalyst use); USES (Uses)
(improvements in reclaiming of natural and synthetic **rubbers**)

IT 57-11-4, Stearic acid, uses 1314-13-2, Zinc oxide, uses 7704-34-9,
Sulfur, uses
RL: NUU (Nonbiological use, unclassified); USES (Uses)
(improvements in reclaiming of natural and synthetic **rubbers**)

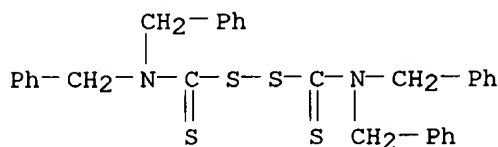
IT **10591-85-2**, Tetrabenzylthiuram disulfide
RL: CAT (Catalyst use); USES (Uses)
(improvements in reclaiming of natural and synthetic **rubbers**)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
(9CI) (CA INDEX NAME)



L10 ANSWER 18 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1995:557721 HCAPLUS
 DN 123:172212
 TI Peroxide vulcanized rubber composition
 AU Anon.
 CS UK
 SO Res. Discl. (1995), 371, 229-30
 CODEN: RSDSBB; ISSN: 0374-4353
 DT Journal
 LA English
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 OS MARPAT 123:172212
 AB Tetrabenzylthiuram disulfide is used as a scorch retarder in rubber peroxide vulcanizates such as Keltan 520.
 ST scorch retarder rubber vulcanization; benzylthiuram disulfide scorch retarder
 IT Vulcanization accelerators and agents
 (neg.; scorch retarders for peroxide-vulcanized **rubber** compns.)
 IT **Rubber**, synthetic
 RL: POF (Polymer in formulation); USES (Uses)
 (dicyclopentadiene-ethylene-propene, scorch retarders for peroxide-vulcanized **rubber** compns.)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (scorch retarders for peroxide-vulcanized **rubber** compns.)
 IT 25034-71-3, Dicyclopentadiene-ethylene-propylene copolymer
 RL: POF (Polymer in formulation); USES (Uses)
 (scorch retarders for peroxide-vulcanized **rubber** compns.)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: CAT (Catalyst use); USES (Uses)
 (scorch retarders for peroxide-vulcanized **rubber** compns.)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER (19) OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1995:29260 HCAPLUS
 DN 122:135730
 TI Stable crosslinks by dithioalkane vulcanization - a route to heat-resistant diene elastomers
 AU Nordsiek, K. H.; Wolpers, J.
 CS Rubber, Dep., Huels A. G., Marl, Germany
 SO Kautsch. Gummi Kunstst. (1994), 47(5), 319-27
 CODEN: KGUKAC; ISSN: 0022-9520
 DT Journal
 LA English
 CC 39-10 (Synthetic Elastomers and Natural Rubber)

ST natural rubber, isoprene rubber and SBR rubber. In an optimized curing system, 1,6-bis(dibenzylthiocarbamoyldisulfido) hexane was used together with small amts. of sulfur and addnl. accelerator for polyisoprene vulcanization. Such combination provided improved reversion resistance and aging stability. Even after considerable overvulcanization, no deterioration of phys. properties was obsd.

ST thioalkane vulcanization diene rubber aging stability; natural rubber thioalkane vulcanization aging stability; isoprene rubber thioalkane vulcanization aging stability; SBR rubber thioalkane vulcanization aging stability

IT **Rubber**, butadiene-styrene, properties
 RL: PRP (Properties); RCT (Reactant)
 (stable crosslinks by dithioalkane vulcanization of SBR **rubber**)

IT Heat-resistant materials
 (stable crosslinks by dithioalkane vulcanization of heat-resistant diene **elastomers**)

IT **Rubber**, isoprene, properties
 RL: PRP (Properties); RCT (Reactant)
 (stable crosslinks by dithioalkane vulcanization of isoprene **rubber**)

IT **Rubber**, natural, properties
 RL: PRP (Properties); RCT (Reactant)
 (stable crosslinks by dithioalkane vulcanization of natural **rubber**)

IT Vulcanization accelerators and agents
 (reversion- and scorch-resistant, reversion resistance by dithioalkane vulcanization of diene **elastomers**)

IT 9003-55-8
 RL: PRP (Properties); RCT (Reactant)
 (**rubber**, stable crosslinks by dithioalkane vulcanization of SBR **rubber**)

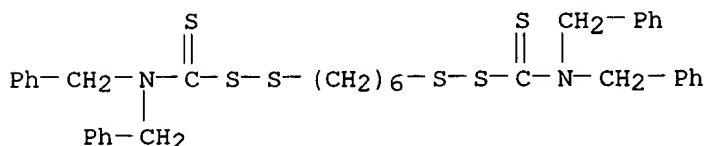
IT 9003-31-0
 RL: PRP (Properties); RCT (Reactant)
 (**rubber**, stable crosslinks by dithioalkane vulcanization of isoprene **rubber**)

IT **151900-44-6** 161000-83-5 161000-84-6 161000-85-7
 RL: RCT (Reactant)
 (stable crosslinks by dithioalkane **vulcanization** of diene **elastomers**)

IT **151900-44-6**
 RL: RCT (Reactant)
 (stable crosslinks by dithioalkane **vulcanization** of diene **elastomers**)

RN 151900-44-6 HCAPLUS

CN Carbamo(dithioperoxo)thioic acid, bis(phenylmethyl)-, 1,6-hexanediyl ester (9CI) (CA INDEX NAME)



L10 ANSWER 20 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1995:28128 HCAPLUS

DN 122:135713

TI Minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates

AU Layer, Robert W.; Chasar, Dwight W.

CS B. F. Goodrich Company, Brecksville, OH, 44141, USA

SO Rubber Chem. Technol. (1994), 67(2), 299-313

CODEN: RCTEA4; ISSN: 0035-9475

LA English
CC 39-9 (Synthetic Elastomers and Natural Rubber)
AB Thiuram disulfides and dithiocarbamates librate their amines because of undesired side reactions. Accordingly, compared to sulfenamides, they produce significant, but much lower levels of nitrosamines during the cure. In an effort to reduce these side reactions, and thus the amt. of nitrosamine which forms, the authors investigated the effect of steric factors on nitrosamine formation. Thiurams and dithiocarbamates made from sterically bulky amines, like diisobutylamine, produce orders of magnitude lower levels of nitrosamine than TMTD. At the same time, when used as a kicker for 2-benzothiazole sulfenamides, N,N,N',N'-tetraisobutylthiuram disulfide has better scorch safety but cures at the same rate as TMTD. Uniquely, N,N,N',N'-tetraisobutylthiuram monosulfide acts as a retarder as well as a kicker for 2-benzothiazole sulfenamides.

ST sterically hindered thiuram disulfides dithiocarbamate; nitrosamine redn sterically hindered compd; scorch safety thiuram disulfides dithiocarbamate; vulcanization agent nitrosamine formation redn

IT **Rubber**, butadiene-styrene, uses
RL: POF (Polymer in formulation); USES (Uses)
(Ameripol, butadiene **rubber** blends; minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT **Rubber**, nitrile, uses
RL: POF (Polymer in formulation); USES (Uses)
(Hycar 1042; minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT Vulcanization accelerators and agents
(minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT **Rubber**, natural, uses
RL: POF (Polymer in formulation); USES (Uses)
(minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT **Rubber**, synthetic
RL: POF (Polymer in formulation); USES (Uses)
(EPDM, Polysar EPDM 545; minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT Amines, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(N-nitroso, minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT **Rubber**, butadiene, uses
RL: POF (Polymer in formulation); USES (Uses)
(of cis-1,4-configuration, Taktene 1203, SBR **rubber** blends; minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT 62-75-9, N-Nitrosodimethylamine 110-96-3, Diisobutylamine 111-92-2, Di-n-butylamine 601-77-4, N-Nitrosodiisopropylamine 932-83-2, N-Nitrosohexamethylenimine 997-95-5, N-Nitrosodiisobutylamine
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT 95-29-4, DIBS 95-31-8, N-tert-Butyl-2-benzothiazole sulfenamide 95-33-0, N-Cyclohexyl-2-benzothiazole sulfenamide 120-78-5, MBTS 136-23-2, Zinc dibutyldithiocarbamate 137-26-8, TMTD 3064-73-1, N,N,N',N'-Tetraisobutylthiuram disulfide 4136-91-8, N,N,N',N'-Tetraisopropylthiuram disulfide 6052-47-7 **10591-85-2**, N,N,N',N'-Tetrabenzylthiuram disulfide 13821-89-1 14434-68-5, Zinc diisopropyldithiocarbamate 36190-62-2 39818-92-3

(minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as **vulcanization** agents for **rubber** compds.)

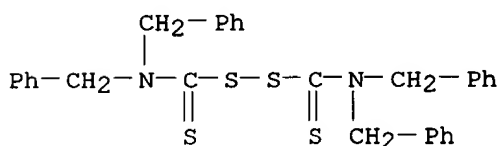
IT 9003-55-8
 RL: POF (Polymer in formulation); USES (Uses)
 (**rubber**, Ameripol, butadiene **rubber** blends; minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT 9003-18-3
 RL: POF (Polymer in formulation); USES (Uses)
 (**rubber**, Hycar 1042; minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT 9003-17-2
 RL: POF (Polymer in formulation); USES (Uses)
 (**rubber**, of cis-1,4-configuration, Taktene 1203, SBR **rubber** blends; minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as vulcanization agents for **rubber** compds.)

IT 10591-85-2, N,N,N',N'-Tetrabenzylthiuram disulfide
 RL: MOA (Modifier or additive use); USES (Uses)
 (minimizing nitrosamines using sterically hindered thiuram disulfides/dithiocarbamates as **vulcanization** agents for **rubber** compds.)

RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H₂N)C(S)]₂S₂), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 21 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1994:580475 HCAPLUS
 DN 121:180475
 TI Hydroxylated telechelic polymers and their preparation and use
 IN Sarraf, Tarek; Catala, Jean Marie
 PA Elf Atochem S.A., Fr.
 SO Eur. Pat. Appl., 10 pp.
 CODEN: EPXXDW
 DT Patent
 LA French
 IC ICM C08F002-38
 CC 35-4 (Chemistry of Synthetic High Polymers)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 592283	A1	19940413	EP 1993-402386	19930930
	EP 592283	B1	19970423		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	FR 2696468	A1	19940408	FR 1992-11845	19921006
	FR 2696468	B1	19941104		
	AT 152134	E	19970515	AT 1993-402386	19930930
	ES 2101265	T3	19970701	ES 1993-402386	19930930
PRAI	FR 1992-11845		19921006		
AB	Vinyl monomers are polyemd. in the presence of a thiuram disulfide [R ₃ OR ₁ NR ₂ C(S)S] ₂ (R ₁ = C ₂ -3 alkylene; R ₂ = C ₁ -10 alkyl, cycloalkyl, aryl, aralkyl; R ₃ = protective group such as silyl or acyl group) as iniferters, and the group R ₃ is removed to give polymers with HOR ₁ NR ₂ C(S)S end groups. Polymn. of Me methacrylate in the presence of [Me ₃ SiOCH ₂ CH ₂ N(CH ₂ Ph)C(S)S] ₂				

and hydrolysis of the end groups in the presence of an acid gave a polymer with HOCH₂CH₂N(CH₂Ph)C(S)S end groups.

ST thiuram disulfide deriv telomer prepn; methacrylate thiuram disulfide telomer prepn; hydroxy termination telomer thiuram disulfide; silyl deriv thiuram disulfide telomer; protection hydroxy group telomerization

IT Acyl groups
(for hydroxy groups of thiuram disulfides in telomerization)

IT Telomers
RL: PREP (Preparation)
(hydroxy-terminated, prepn. of, thiuram disulfide derivs. in)

IT Telomerization
(of thiuram disulfide derivs. and vinyl monomers, for hydroxy-terminated **polymers**)

IT Protective groups
(silyl, for hydroxy groups of thiuram disulfides in telomerization)

IT **157974-45-3DP**, hydrolyzed, hydroxy-terminated
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and uses of)

IT **157974-45-3DP**, hydrolyzed, hydroxy-terminated
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and uses of)

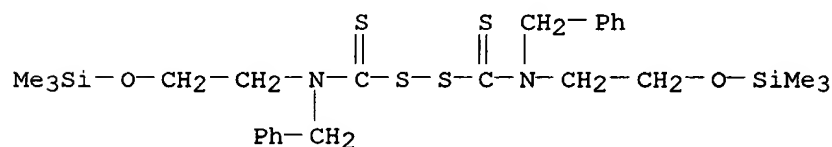
RN 157974-45-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, telomer with
N,N'-bis(phenylmethyl)-N,N'-bis[2-[(trimethylsilyl)oxy]ethyl]thioperoxydic
armonic diamide ([H₂N)C(S)]₂S₂) (9CI) (CA INDEX NAME)

CM 1

CRN 157974-44-2

CMF C26 H40 N2 O2 S4 Si2



CM 2

CRN 9011-14-7

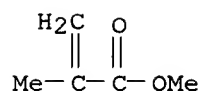
CMF (C5 H8 O2)_x

CCI PMS

CM 3

CRN 80-62-6

CMF C5 H8 O2



L10 ANSWER 22 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1994:166578 HCAPLUS

DN 120:166578

TI Rubber vulcanization systems

IN D'Sidocky, Richard Michael; Maly, Neil Arthur

PA Goodyear Tire and Rubber Co., USA

SO Eur. Pat. Appl., 17 pp.

CODEN: EPXXDW

DT Patent

English
 IC ICM C08L021-00
 ICS C08K013-02
 ICI C08K013-02, C08K003-06, C08K005-3415, C08K005-40, C08K005-47
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 564966	A2	19931013	EP 1993-105309	19930331
	EP 564966	A3	19940119		
	R: BE, DE, ES, FR, GB, IT, NL				
	US 5736615	A	19980407	US 1992-863891	19920406
	CA 2076056	AA	19931007	CA 1992-2076056	19920813
	JP 06025308	A2	19940201	JP 1993-79751	19930406
	US 5616279	A	19970401	US 1995-454779	19950531

PRAI US 1992-863891 19920406

OS MARPAT 120:166578

AB Tetrabenzylthiuram disulfide (I) in combination with bismaleimide and sulfenamide compds. gives good vulcanization of rubbers, giving vulcanizates showing good phys. properties and reversion resistance. A natural rubber compn. contg. S 1.75, N-cyclohexyl-2-benzothiazylsulfenamide 0.75, 1,3-bismaleimidobenzene 1.30, and I 0.30 part was vulcanized at 150.degree. for 15 min.

ST tetrabenzylthiuram disulfide vulcanization rubber; sulfenamide tetrabenzylthiuram disulfide vulcanization; maleimide tetrabenzylthiuram disulfide vulcanization; sulfur vulcanization tetrabenzylthiuram disulfide

IT Vulcanization accelerators and agents
 (bismaleimide-sulfenamide-sulfur-tetrabenzylthiuram disulfide, for diene rubbers)

IT Rubber, butadiene, reactions
 Rubber, butadiene-styrene, reactions
 Rubber, natural, reactions
 Rubber, neoprene, reactions
 Rubber, nitrile, reactions
 RL: RCT (Reactant)
 (vulcanization of, tetrabenzylthiuram disulfide-contg. compns. for)

IT Sulfenamides
 RL: USES (Uses)
 (vulcanizing compns. contg. tetrabenzylthiuram disulfide and)

IT Rubber, synthetic
 RL: RCT (Reactant)
 (acrylonitrile-isoprene, vulcanization of, tetrabenzylthiuram disulfide-contg. compns. for)

IT Rubber, synthetic
 RL: RCT (Reactant)
 (butadiene-isoprene, vulcanization of, tetrabenzylthiuram disulfide-contg. compns. for)

IT Rubber, synthetic
 RL: RCT (Reactant)
 (butadiene-isoprene-styrene, vulcanization of, tetrabenzylthiuram disulfide-contg. compns. for)

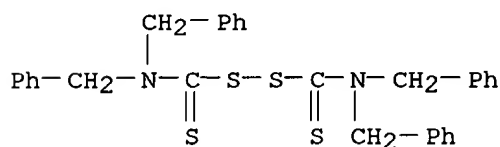
IT Rubber, isoprene, reactions
 RL: RCT (Reactant)
 (of cis-1,4-configuration, vulcanization of, tetrabenzylthiuram disulfide-contg. compns. for)

IT 9003-31-0
 RL: USES (Uses)
 (rubber, of cis-1,4-configuration, vulcanization of, tetrabenzylthiuram disulfide-contg. compns. for)

IT 9003-17-2 9003-18-3 9003-55-8 9010-98-4
 RL: USES (Uses)
 (rubber, vulcanization of, tetrabenzylthiuram disulfide-contg. compns. for)

IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (vulcanization accelerators, contg. bismaleimides and sulfenamides)

3278-31-7, N,N'-(p-Phenylene)bismaleimide 3741-80-8 4856-87-5,
 N,N'-Hexamethylenebismaleimide~ 4979-32-2 5132-30-9,
 N,N'-Ethylenebismaleimide 10220-34-5 13132-94-0, N,N'-(Oxydi-p-
 phenylene)bismaleimide 13676-54-5, N,N'-(Methylenedi-p-
 phenylene)bismaleimide 38094-86-9 109835-38-3
 RL: USES (Uses)
 (vulcanization systems contg. tetrabenzylthiuram disulfide and)
 IT 25014-11-3, Acrylonitrile-isoprene copolymer 25102-52-7,
 Butadiene-isoprene copolymer 26602-62-0, Butadiene-isoprene-styrene
 copolymer
 RL: USES (Uses)
 (vulcanization systems for, tetrabenzylthiuram disulfide-contg.)
 IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (vulcanization accelerators, contg. bismaleimides and
 sulfenamides)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 23 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1994:32707 HCAPLUS

DN 120:32707

TI Bis(thiocarbamoyl disulfides) in vulcanization of diene rubbers

IN Wolpers, Juergen; Zerpner, Dieter; Nordsiek, Karl Heinz

PA Huels A.-G., Germany

SO Eur. Pat. Appl., 34 pp. ?

CODEN: EPXXDW

DT Patent

LA German

IC ICM C08L021-00

ICS C08K005-39

CC 39-10 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 530590	A1	19930310	EP 1992-114120	19920819
	EP 530590	B1	19960117		

R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL

DE 4128869 A1 19930304 DE 1991-4128869 19910830

DE 4225684 A1 19940210 DE 1992-4225684 19920804

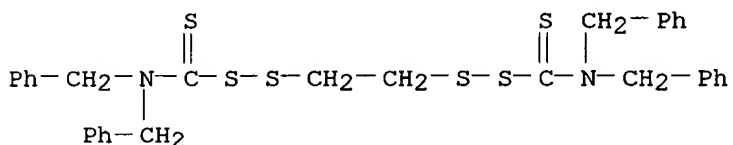
PRAI DE 1991-4128869 19910830

DE 1992-4225684 19920804

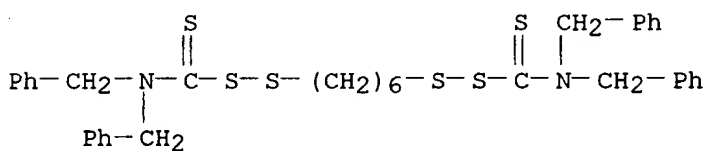
AB Reversion-resistant diene rubber vulcanizates are prepd. at
 140-200.degree. in the presence of the thiocarbamoyl disulfides
 (PhCH2)2NC(S)SS(CH2)nSSC(S)N(CH2Ph)2 (I) (n = 2 or 6) 1-4.5, S 0.05-0.3,
 and mercaptans 1-2.5 or sulfenamides 0.2-0.8 or mercaptans 0.3-2.5 and
 sulfenamides 0.1-0.8 phr. Compounded natural rubber contg. S 0.2,
 N-tert-butyl-2-benzothiazolesulfenamide 0.4, and I (n = 2) 3.0 phr,
 vulcanized at 150.degree. for 30 min, had tensile strength 23.2 MPa,
 elongation 516%, 300% modulus 12.5 MPa, Shore A hardness 65, resilience
 47%, and compression set (24 h, 100.degree.) 41%, vs. 17.8, 375, 15.2, 70,
 52, and 23, resp., when left at 100.degree. for 7 days before
 vulcanization.

ST vulcanizing agent reversion resistance; diene rubber vulcanizing agent;
 natural rubber vulcanizing agent; thiocarbamoyl disulfide vulcanizing
 agent

IT, vulcanization accelerators and agents
 (bis(thiocarbamoyl disulfides), reversion-resistant, for diene
 rubbers)
 IT Rubber, butadiene, miscellaneous
 Rubber, butadiene-styrene, miscellaneous
 Rubber, isoprene, miscellaneous
 Rubber, natural, miscellaneous
 Rubber, nitrile, miscellaneous
 RL: MSC (Miscellaneous)
 (reversion-resistant vulcanizing agents for, bis(thiocarbamoyl
 disulfides) as)
 IT Rubber, synthetic
 RL: MSC (Miscellaneous)
 (polyoctenamer, reversion-resistant vulcanizing agents for,
 bis(thiocarbamoyl disulfides) as)
 IT 9003-17-2 9003-18-3 9003-31-0 9003-55-8 28702-45-6,
 Poly(1-octene-1,8-diyl)
 RL: USES (Uses)
 (rubber, reversion-resistant vulcanizing agents for,
 bis(thiocarbamoyl disulfides) as)
 IT 151900-43-5 151900-44-6
 RL: USES (Uses)
 (vulcanizing agents, reversion-resistant, for diene
 rubbers)
 IT 151900-43-5 151900-44-6
 RL: USES (Uses)
 (vulcanizing agents, reversion-resistant, for diene
 rubbers)
 RN 151900-43-5 HCAPLUS
 CN Carbamo(dithioperoxo)thioic acid, bis(phenylmethyl)-, 1,2-ethanediyl ester
 (9CI) (CA INDEX NAME)

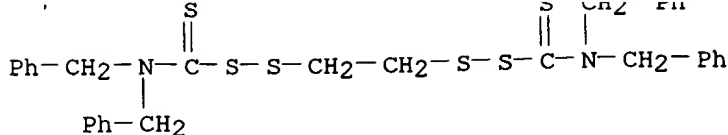


RN 151900-44-6 HCAPLUS
 CN Carbamo(dithioperoxo)thioic acid, bis(phenylmethyl)-, 1,6-hexanediyl ester
 (9CI) (CA INDEX NAME)

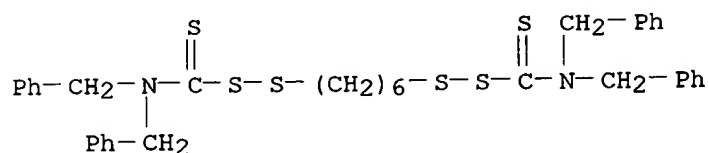


✓ L10 ANSWER 24 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1994:10211 HCAPLUS
 DN 120:10211
 TI Bis(thiocarbamoyl disulfides) as vulcanizing agents for diene rubbers
 IN Wolpers, Juergen; Zerpner, Dieter; Nordsiek, Karl Heinz
 PA Huels AG, Germany
 SO Ger. Offen., 11 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C08L021-00
 ICS C08L045-00; C08K005-40; C08K013-02; C08J003-24
 ICA B60C001-00
 ICI C08K013-02, C08K003-06, C08K005-37, C08K005-40, C08K005-44

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4128869	A1	19930304	DE 1991-4128869	19910830
	EP 530590	A1	19930310	EP 1992-114120	19920819
	EP 530590	B1	19960117		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL				
	AT 133189	E	19960215	AT 1992-114120	19920819
	ES 2082303	T3	19960316	ES 1992-114120	19920819
	JP 05209092	A2	19930820	JP 1992-228196	19920827
	CA 2077156	AA	19930301	CA 1992-2077156	19920828
	US 5342900	A	19940830	US 1992-937109	19920831
PRAI	DE 1991-4128869		19910830		
	DE 1992-4225684		19920804		
AB	The use of 3-4.5 phr thiocarbamoyl disulfide (PhCH ₂) ₂ NC(S)SS(CH ₂) _n SS(S)CN(CH ₂ Ph) ₂ [n = 2 (I) or 6] and very small amts. of S and accelerators in the vulcanization of diene rubbers at 140-200.degree. gives vulcanizates resisting reversion and aging. Compounded natural rubber contg. S 0.2, a sulfenamide accelerator 0.4, and I 3.0 phr was vulcanized at 150.degree. for 30 min to give vulcanizates with tensile strength 23.2 MPa, elongation 516%, 300% modulus 12.5 MPa, and compression set 25 and 41 after 24 h at 70 and 100.degree., resp.; vs. 17.8, 375, 15.2, 22, and 23, resp., after 7 days at 100.degree..				
ST	vulcanizing agent diene rubber; natural rubber vulcanizing agent; reversion resistance vulcanizing agent; thiocarbamoyl disulfide vulcanizing agent; dibenzylthiocarbamoyl ethylenebisdisulfide vulcanizing agent				
IT	Vulcanization accelerators and agents (bis(thiocarbamoyl disulfides), for diene rubbers , resistant to reversion and aging)				
IT	Rubber , butadiene, miscellaneous RL: MSC (Miscellaneous) (blends with natural rubber and SBR, reversion-resistant vulcanization accelerators for, bis(thiocarbamoyl disulfides as))				
IT	Rubber , butadiene-styrene, miscellaneous Rubber , isoprene, miscellaneous Rubber , natural, miscellaneous RL: MSC (Miscellaneous) (reversion-resistant vulcanization accelerators for, bis(thiocarbamoyl disulfides as))				
IT	9003-17-2 RL: USES (Uses) (rubber , blends with natural rubber and SBR, reversion-resistant vulcanization accelerators for, bis(thiocarbamoyl disulfides as))				
IT	9003-31-0 9003-55-8 RL: USES (Uses) (rubber , reversion-resistant vulcanization accelerators for, bis(thiocarbamoyl disulfides as))				
IT	151900-43-5 151900-44-6 RL: USES (Uses) (vulcanizing agents, reversion-resistant, for diene rubbers)				
IT	151900-43-5 151900-44-6 RL: USES (Uses) (vulcanizing agents, reversion-resistant, for diene rubbers)				
RN	151900-43-5 HCAPLUS				
CN	Carbamo(dithioperoxo)thioic acid, bis(phenylmethyl)-, 1,2-ethanediyl ester (9CI) (CA INDEX NAME)				



RN 151900-44-6 HCAPLUS
 CN Carbamo(dithioperoxo)thioic acid, bis(phenylmethyl)-, 1,6-hexanediyl ester
 (9CI) (CA INDEX NAME)

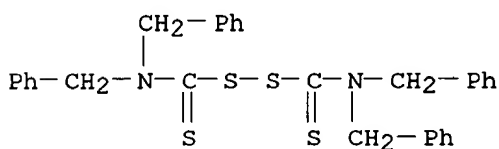


L10 ANSWER 25 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1993:562194 HCAPLUS
 DN 119:162194
 TI EPDM rubber compositions
 IN Tanimoto, Yoshio; Ikeda, Kyoshi; Koshiba, Junichi
 PA Sumitomo Chemical Co, Japan
 SO Jpn. Kokai Tokkyo Koho, 4 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese
 IC ICM C08L023-16
 ICS C08K005-39; C08K005-40
 CC 39-9 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05086235	A2	19930406	JP 1991-167905	19910709
	JP 2982391	B2	19991122		
AB	The title compns. with high vulcanization speed and good scorching resistance contain (A) ethylene-.alpha.-olefin-nonconjugated diene copolymer rubbers, (B) tetrabenzylthiuram disulfide (I), and (C) Zn dibenzylldithiocarbamate (II), where sum of wt. of B and C is 0.5-5 parts per 100 parts A and B-C wt. ratio is 10-90:90-10. Thus, ethylene-propylene-ethylidenenorbornene copolymer rubber (ML1+4, 121.degree. = 65, 70% ethylene content) 100, FEF black 150, paraffin oil 100, ZnO 5, stearic acid 1, I 1.5, II 1.5, 2-mercaptobenzothiazole 1.0, N-cyclohexyl-2-benzothiazylsulfeneamide 1.0, and S 1.5 parts were kneaded to obtain unvulcanized rubber compn. showing scorch time 10.5 min (t5, ML 125.degree.) and optimum vulcanization time 22.8 min (t'c 90, ODR 160.degree.). The compn. was press vulcanized at 160.degree. for 20 min to give test sheets showing tensile strength 131 kg/cm2 and elongation 360%.				
ST	EPDM rubber compn vulcanization rate; scorch resistance EPDM rubber compn				
IT	Rubber , synthetic RL: USES (Uses) (EPDM, vulcanized, contg. tetrabenzylthiuram disulfide and zinc benzylldithiocarbamate, with high vulcanization rate and scorch resistance)				
IT	10591-85-2 , Tetrabenzylthiuram disulfide RL: USES (Uses) (EPDM rubber compns. contg., for high vulcanization rate and scorch resistance)				
IT	14726-36-4 RL: USES (Uses) (EPDM rubber compns. contg., for high vulcanization rate and scorch stability)				
IT	74-85-1				

(**rubber**, EPDM, vulcanized, contg. tetrabenzylthiuram disulfide and zinc benzyldithiocarbamate, with high vulcanization rate and scorch resistance)
 IT 25038-36-2, Ethylene-ethylidenenorbornene-propylene copolymer
 RL: USES (Uses)
 (**rubber**, vulcanized, contg. tetrabenzylthiuram disulfide and zinc benzyldithiocarbamate, with high vulcanization rate and scorch resistance)
 IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (EPDM **rubber** compns. contg., for high vulcanization rate and scorch resistance)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 26 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1993:519228 HCAPLUS
 DN 119:119228
 TI Alternative vulcanization system for mixtures based on EPDM
 AU Wilbrink, J.; Seeberger, D.
 CS Italy
 SO Ind. Gomma (1992), 36(11), 24, 27-8, 30
 CODEN: INGOAF; ISSN: 0019-7556
 DT Journal
 LA Italian
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 Section cross-reference(s): 4, 59
 AB Primary amines were used as vulcanization accelerators instead of dithiocarbamates and thiurams, to minimize the formation of carcinogenic nitrosamines. Blends of synthetic rubbers with mixts. of cyclohexyl-2-benzothiazole sulfenamide, tert-butyl-2-benzothiazole sulfenamide, tetrabenzylthiuram disulfide, Zn dibenzyldithiocarbamate, and/or Zn-O-butyl-O-hexyldithiophosphate (Perkacit CBS, TBBS, TBzTD, ZBEC, and 267, resp.) and >20% S were prepd. The vulcanization rate for Nordel 1070, Vistalon 7500, and EP Total 435E rubbers was better than or comparable to that of traditional vulcanization systems and occupational conditions were improved.
 ST vulcanization EPDM amine nitrosamine minimization; sulfenamide vulcanization accelerator EPDM; tetrabenzylthiuram disulfide vulcanization EPDM
 IT Hygiene, industrial
 (in **rubber** vulcanization, alternative accelerators for minimization of nitrosamine exposure for)
 IT **Rubber**, synthetic
 RL: RCT (Reactant)
 (EPDM, vulcanization of, alternative accelerators for, for minimization of nitrosamines)
 IT **Rubber**, synthetic
 RL: RCT (Reactant)
 (ethylene-ethylidenenorbornene-propene, vulcanization of, alternative accelerators for, for minimization of nitrosamines)
 IT **Rubber**, synthetic
 RL: RCT (Reactant)
 (ethylene-hexadiene-propene, vulcanization of, alternative accelerators for, for minimization of nitrosamines)

(noncarcinogenic, primary amine-based, for minimization of nitrosamines)

IT Health hazard
(occupational, in **rubber** vulcanization by nitrosamine, alternative accelerators for minimization of)

IT Amines, preparation
RL: FORM (Formation, nonpreparative)
(N-nitroso, formation of, minimization of, alternative vulcanization agents for EPDM **rubbers** for)

IT 74-85-1
RL: USES (Uses)
(**rubber**, EPDM, vulcanization of, alternative accelerators for, for minimization of nitrosamines)

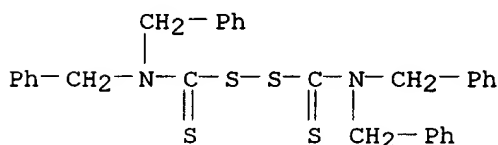
IT 9046-49-5, Ethylene-hexadiene-propene copolymer 25038-36-2, Ethylene-ethylidenenorbornene-propene copolymer
RL: USES (Uses)
(**rubber**, vulcanization of, alternative accelerators for, for minimization of nitrosamines)

IT 95-31-8 95-33-0 **10591-85-2**, Tetrabenzylthiuram disulfide 14726-36-4 68413-49-0
RL: USES (Uses)
(**vulcanization** accelerator, for EPDM, for minimization of nitrosamines)

IT **10591-85-2**, Tetrabenzylthiuram disulfide
RL: USES (Uses)
(**vulcanization** accelerator, for EPDM, for minimization of nitrosamines)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 27 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1993:429744 HCAPLUS

DN 119:29744

TI Contribution to explanation of the role of nitrosamine in rubber manufacture

AU Seeberger, D. B.

CS AKZO Chem. GmbH, Germany

SO Elektroizol. Kablova Tech. (1991), 44(4), 12-16
CODEN: EKTIA6; ISSN: 0322-7111

DT Journal; General Review

LA Slovak

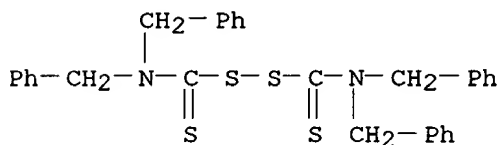
CC 39-0 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 4, 59

AB A review with 17 refs. discussing formation of nitrosamines during vulcanization and during storage of vulcanizates, as well as their carcinogenicity. The use of noncarcinogenic nitrosamines, in particular tetrabenzylthiuram disulfide, in vulcanization of natural rubber is also discussed.

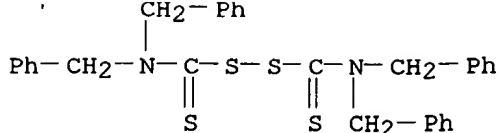
ST review nitrosamine rubber vulcanization; carcinogenicity nitrosamine rubber manuf review; tetrabenzylthiuram disulfide vulcanization rubber review; thiuram deriv vulcanization rubber review; natural rubber tetrabenzylthiuram disulfide review

IT **Rubber**, natural, preparation
Rubber, synthetic
RL: PREP (Preparation)
(manuf. of, nitrosamine use and formation in)

(nitrosamine derivs.)
 IT Health hazard
 (nitrosamine in **rubber** manuf. in relation to)
 IT Vulcanization
 (of **rubber**, nitrosamine use and formation in)
 IT 35576-91-1, Nitrosamine 35576-91-1D, Nitrosamine, derivs.
 RL: RCT (Reactant)
 (decompn. of, in **rubber** manuf.)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (vulcanization agents, for natural **rubber**
vulcanization)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (vulcanization agents, for natural **rubber**
vulcanization)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 28 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1993:104509 HCAPLUS
 DN 118:104509
 TI TBzTD and CBBS - alternative accelerators for reducing nitrosamine
 generation
 AU Jablonowski, Thomas L.
 CS Uniroyal Chem. Co., USA
 SO Rubber World (1992), 206(5), 18-22
 CODEN: RUBWAQ; ISSN: 0035-9572
 DT Journal
 LA English
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 Section cross-reference(s): 59
 AB N,N,N',N',-Tetrabenzylthiuram disulfide (I) and N-cyclohexylbis(2-
 benzothiazole)sulfenamide (II) are used as replacements for typical
 vulcanization accelerators; typical accelerators generate nitrosamines
 which are a health hazard. I and II are used in compds. based on natural
 rubber, SBR, EPDM, and nitrile rubber.
 ST vulcanization accelerator replacement; thiuram disulfide vulcanization
 accelerator; benzothiazolesulfenamide vulcanization accelerator;
 nitrosamine safety vulcanization accelerator
 IT Vulcanization accelerators and agents
 (cyclohexylbis(benzothiazole)sulfenamide and tetrabenzylthiuram
 disulfide as, in elimination of nitrosamine-generating compds.)
 IT Safety
 (of vulcanization accelerators generating nitrosamines)
 IT 3264-02-6 **10591-85-2**
 RL: USES (Uses)
 (vulcanization accelerators, use and properties of)
 IT **10591-85-2**
 RL: USES (Uses)
 (vulcanization accelerators, use and properties of)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 29 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1992:635644 HCAPLUS

DN 117:235644

TI Nitrosamine-free rubbers resisting thermal aging

IN Graebner, Friedrich Wilhelm; Fabienke, Eberhard

PA Phoenix A.-G., Germany

SO Ger. Offen., 7 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C08L009-00

ICS C08L023-16; C08K005-47; C08K005-44; C08K005-40; C08K005-09;

C08K005-01; C08K003-04; C08K003-06; C08K003-22; C08J003-24

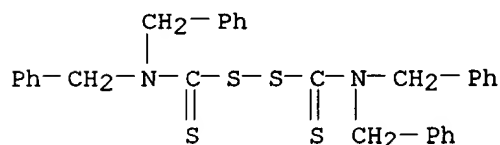
ICA C08K005-39; C08K005-3437; C08K005-18

CC 39-10 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4207028	A1	19920910	DE 1992-4207028	19920306
PRAI	DE 1991-4107650		19910309		
	DE 1991-4110956		19910405		
AB	The title compds., with good processability and high vulcanization rates, contain diene rubbers or EPDM and thiuram polysulfides and/or dialkylidithiocarbamates of specified structure and 2-mercaptobenzothiazole or its sulfide derivs. and/or sulfenamides in specified amts. Compounded EPDM contg. 2,2'-dithiobisbenzothiazole 0.8, tetrabenzylthiuram disulfide 3.2, and S 1.0 phr gave vulcanizates with tensile strength 13.7 and 14.9 N/mm ² , elongation 395 and 269%, and Shore A hardness 66 and 71 after 0 and 72 h, resp., at 150.degree..				
ST	vulcanization agent nitrosamine free; heat resistance rubber nitrosamine free; benzothiazole disulfide vulcanizing agent; mercaptobenzothiazole vulcanizing agent; thiuram disulfide vulcanizing agent; EPDM vulcanization nitrosamine free; diene rubber nitrosamine free				
IT	Rubber , isoprene, miscellaneous RL: MSC (Miscellaneous) (nitrosamine-free vulcanizing agents for)				
IT	Vulcanization accelerators and agents (nitrosamine-free, thiuram sulfides, dithiocarbamates and mercaptobenzothiazole derivs., for EPDM and diene rubbers)				
IT	Sulfenamides RL: USES (Uses) (vulcanizing agents, nitrosamine-free, for EPDM and diene rubbers)				
IT	Rubber , synthetic RL: MSC (Miscellaneous) (EPDM, nitrosamine-free vulcanizing agents for)				
IT	74-85-1 RL: USES (Uses) (rubber , EPDM, nitrosamine-free vulcanizing agents for)				
IT	9003-31-0 RL: USES (Uses) (rubber , nitrosamine-free vulcanizing agents for)				
IT	95-31-8, N-tert-Butyl-2-benzothiazolesulfenamide 120-78-5, 2,2'-Dithiobisbenzothiazole 149-30-4, 2-Mercaptobenzothiazole 10591-85-2, Tetrabenzylthiuram disulfide RL: USES (Uses) (vulcanizing agent, nitrosamine-free, for EPDM and diene rubbers)				
IT	594-07-0D, Dithiocarbamic acid, dialkyl derivs., metal salts				

(vulcanizing agents, nitrosamine-free, for EPDM and diene rubbers)
 IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (vulcanizing agent, nitrosamine-free, for EPDM and diene rubbers)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 30 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1992:572769 HCAPLUS
 DN 117:172769
 TI Photodegradable polyolefin compositions as protective seed films
 IN Poyner, William Raymond; Chakraborty, Khirud Behari
 PA Robinson Brothers Ltd., UK
 SO Eur. Pat. Appl., 10 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM C08K005-07
 CC 37-6 (Plastics Manufacture and Processing)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 482914	A2	19920429	EP 1991-309805	19911023
	EP 482914	A3	19930310		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	CA 2054139	AA	19920426	CA 1991-2054139	19911024
	AU 9186084	A1	19920430	AU 1991-86084	19911024
	AU 643564	B2	19931118		
	ZA 9108482	A	19921028	ZA 1991-8482	19911024
	JP 05086225	A2	19930406	JP 1991-279075	19911025
	US 5274019	A	19931228	US 1993-49516	19930419
	AU 9350387	A1	19940120	AU 1993-50387	19931101
	AU 654634	B2	19941110		

PRAI GB 1990-23238 19901025
 US 1991-782405 19911025

OS MARPAT 117:172769

AB The title compn. comprises a minor amt. of pro-degradant of carbocyclic .beta.-diketones and their metal complexes, e.g., 2,2'-methylene(1,3-cyclohexanedione) (I) or its Mn(II) or Zn complex. Propathene HF 26 contg. 0.1% I had induction period (onset of carbonyl formation) 35 h and embrittlement 105 h, vs. 10 and 110, resp., without I.

ST polypropylene film photodegradable; cyclic diketone prodegradant polyolefin; methylenecyclohexanedione prodegradant polypropylene; manganese complex diketone prodegradant; zinc complex diketone prodegradant; seed film polyolefin photodegradable

IT Mulches

(polyolefins films prodegradants for)

IT Ketones, uses

RL: USES (Uses)

(1,3-di-, cyclic, prodegradant, for photodegradable polyolefin film)

IT Alkenes, **polymers**

RL: USES (Uses)

(**polymers**, pro-degradant mixt. for photodegradable, cyclic diketone and metal complex mixt. as)

IT 2002-88-4, Polyethylene 25000 55 4, Triphenylene 1120
 RL: USES (Uses)
 (pro-degradant mixt. for photodegradable, cyclic diketone and metal complex mixt. as)

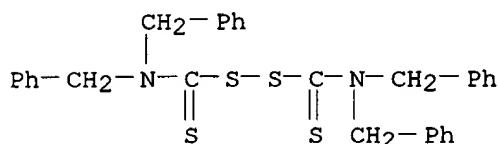
IT 2181-22-8, 2,2'-Methylenebis(5,5-dimethyl-1,3-cyclohexanedione)
 20117-71-9 54135-60-3, 2,2'-Methylenebis(1,3-cyclohexanedione)
 55771-10-3 114723-79-4 143673-41-0 143673-42-1 143686-43-5
 143689-67-2 143689-68-3 143689-69-4 143689-70-7 143689-71-8
 143689-72-9 143689-73-0 143715-28-0
 RL: USES (Uses)
 (prodegradant, for photodegradable polyolefin)

IT 10591-85-2, Tetrabenzylthiuram disulfide 85298-60-8
 143894-14-8
 RL: USES (Uses)
 (prodegradant, with cyclodiketones, for photodegradable polyolefin)

IT 10591-85-2, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (prodegradant, with cyclodiketones, for photodegradable polyolefin)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 31 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1992:471486 HCAPLUS

DN 117:71486

TI Vulcanizable elastomer compositions containing tetrabenzylthiuram disulfide and urea, generating no nitrosamines during curing

IN Rowland, George R.; Faiman, David T.; Jablonowski, Thomas L.

PA Uniroyal Chemical Co., Inc., USA

SO PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C08K005-00

ICA C08L021-00

ICI C08K005-00, C08K005-40, C08K005-21

CC 39-10 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9207028	A1	19920430	WO 1991-US7414	19911008
	W: BR, CA, CS, FI, HU, JP, KR, NO, PL, RO, SU				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	US 5326828	A	19940705	US 1992-959507	19921009

PRAI US 1990-595156 19901010

AB The compns. contain unsatd. rubbers 100, S 0.05-10, tetrabenzylthiuram disulfide (I) 0.02-3.0, and urea 0.02-6.0 parts with I/urea ratio 1-10:1-10. Thus, a compn. (A) contg. Royalene 512 50, Royalene X 3180 (EPDM) 50, carbon black 125, process oil 95, ZnO 5, stearic acid 1, Delac NS 2, MBTS 0.3, S 0.7, I 0.5, and urea 1.25 part was cured at 320.degree.F, showing max. torque 20.5 lb-in and time for 90% cure 15.1 min; vs. 20.9 and 16.4, resp. for a compn. (B) contg. 1 part I and no urea; cured A showed phys. properties comparable to cured B.

ST tetrabenzylthiuram disulfide urea synergistic vulcanizer; vulcanization EPDM synergistic agent urea

IT Vulcanization accelerators and agents

(synergistic, urea and tetrabenzylthiuram disulfide, for unsatd. rubbers)

Rubber, natural, miscellaneous
 RL: MSC (Miscellaneous)
 (vulcanization accelerators for, synergistic, urea and tetrabenzylthiuram disulfide as)

IT **Rubber**, synthetic
 RL: MSC (Miscellaneous)
 (EPDM, vulcanization accelerators for, synergistic, urea and tetrabenzylthiuram disulfide as)

IT **Rubber**, synthetic
 RL: MSC (Miscellaneous)
 (ethylene-ethylidenenorbornene-propene, vulcanization accelerators for, synergistic, urea and tetrabenzylthiuram disulfide as)

IT 74-85-1
 RL: USES (Uses)
 (**rubber**, EPDM, vulcanization accelerators for, synergistic, urea and tetrabenzylthiuram disulfide as)

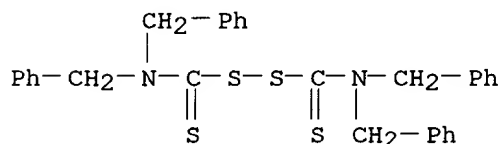
IT 9003-55-8 25038-36-2
 RL: USES (Uses)
 (**rubber**, vulcanization accelerators for, synergistic, urea and tetrabenzylthiuram disulfide as)

IT 57-13-6, Urea, uses
 RL: USES (Uses)
 (vulcanizing agent, synergistic with tetrabenzylthiuram disulfide)

IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (**vulcanizing** agent, synergistic with urea)

IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (**vulcanizing** agent, synergistic with urea)

RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([$(\text{H}_2\text{N})\text{C}(\text{S})_2\text{S}_2$), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 32 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1992:450447 HCAPLUS
 DN 117:50447
 TI Possibilities for development of crosslinking systems without formation of dangerous N-nitrosamine
 AU Graf, H. J.; Kleinknecht, H.; Menting, K. H.
 CS Rhein Chem. Rheinau G.m.b.H., Mannheim, Germany
 SO Gummi, Fasern, Kunstst. (1991), 44(12), 679-84
 CODEN: GFKUED; ISSN: 0176-1625
 DT Journal
 LA German
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 AB Formation of N-nitrosamines was reduced by addn. of an inhibitor or scavenger to the rubber formulation. The rate of reaction of the nitrosylating agent with the inhibitor was high and the reaction was only slightly selective. In systems contg. light fillers, the concn. of the inhibitor and selection and concn. of the activators must be selected carefully. Changes in properties due to the inhibitor could be adjusted by compensations in compn., dosing of the vulcanization agent and accelerators. The formation of N-nitrosamines could also be reduced by selection of vulcanization systems which did not contribute significantly to N-nitrosamine formation. A few examples of such vulcanization systems are given and discussed.
 ST nitrosamine formation redn rubber vulcanization; inhibitor nitrosamine

accelerator vulcanization nitrosamine formation redn

IT Vulcanization
(nitrosamine formation in, redn. of, inhibitors effect on)

IT Vulcanization accelerators and agents
(nitrosamine formation redn. in relation to)

IT **Rubber**, natural, reactions
Rubber, nitrile, reactions
RL: RCT (Reactant)
(vulcanization of, decreased nitrosamine formation in, inhibitors and catalyst system in)

IT **Rubber**, synthetic
RL: RCT (Reactant)
(EPDM, vulcanization of, decreased nitrosamine formation in, inhibitors and catalyst system in)

IT **Rubber**, synthetic
RL: RCT (Reactant)
(ethylene-ethylidenenorbornene-propene, vulcanization of, decreased nitrosamine formation in, inhibitors and catalyst system in)

IT **Rubber**, butadiene, reactions
RL: RCT (Reactant)
(of cis-1,4-configuration, vulcanization of, decreased nitrosamine formation in, inhibitors and catalyst system in)

IT Amines, preparation
RL: FORM (Formation, nonpreparative)
(N-nitroso, formation of, redn. of, in vulcanization of **rubber**, inhibitor and catalyst system effect on)

IT 102-06-7, Rhenogran DPG
RL: USES (Uses)
(Rhenogran KE 8624catalysts contg., for vulcanization of **rubber**, reduced nitrosamine formation in relation to)

IT 95-33-0, Rhenogran CBS 120-78-5, MBTS 137-26-8, TMTD 149-30-4, 2(3H)-Benzothiazolethione 6990-43-8, Rhenocure TP/S **10591-85-2**, Tetrabenzylthiuram disulfide 14726-36-4, Rhenogran ZBEC-70 23847-08-7, Rhenocure S/G 142444-24-4, Rhenocure CUT/G 142444-25-5, Rhenocure TP/G
RL: CAT (Catalyst use); USES (Uses)
(catalysts contg., for **vulcanization** of **rubber**, reduced nitrosamine formation in relation to)

IT 74-85-1
RL: USES (Uses)
(**rubber**, EPDM, vulcanization of, decreased nitrosamine formation in, inhibitors and catalyst system in)

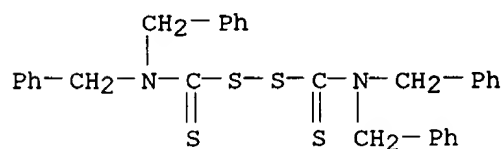
IT 9003-17-2
RL: USES (Uses)
(**rubber**, of cis-1,4-configuration, vulcanization of, decreased nitrosamine formation in, inhibitors and catalyst system in)

IT 9003-18-3 25038-36-2, Ethylene-ethylidenenorbornene-propene copolymer
RL: USES (Uses)
(**rubber**, vulcanization of, decreased nitrosamine formation in, inhibitors and catalyst system in)

IT **10591-85-2**, Tetrabenzylthiuram disulfide
RL: CAT (Catalyst use); USES (Uses)
(catalysts contg., for **vulcanization** of **rubber**, reduced nitrosamine formation in relation to)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H₂N)C(S)]₂S₂), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)

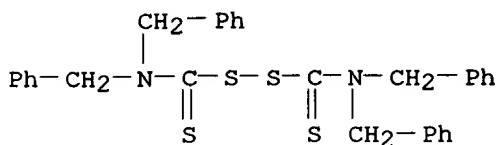


L10 ANSWER 33 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1992:22665 HCAPLUS
 DN 116:22665
 TI Highly crosslinked vulcanizates, especially SBR, free of toxic nitrosamines for roller cages
 IN Graebner, Friedrich Wilhelm; Fabienke, Eberhard
 PA Phoenix A.-G., Germany
 SO Ger. Offen., 5 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C08L021-00
 ICS C08L009-06; C08K013-02; C08J003-24
 ICA C08J003-18; C09K003-10
 ICI C08K013-02, C08K003-04, C08K003-06, C08K003-22, C08K005-47, C08K005-44, C08K005-43, C08K005-40, C08K005-39, C08K005-37, C08K005-09
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4038946	A1	19910613	DE 1990-4038946	19901206
PRAI	DE 1989-3940440		19891207		

AB The title products are vulcanized by mixts. of thiuram polysulfides and/or metal dithiocarbamates; mercaptobenzothiazole, its salts, and/or MBTS; sulfenamides; xanthogen polysulfides, N,N'-polythiodiamides; and S in specified concns. Compounded SBR contg. MBTS 0.8, tetrabenzylthiuram disulfide 3.7, N,N'-dithiobiscaprolactam (I) 2.7, and S 0.4 phr gave vulcanizates (180.degree., 10-15 min) with tensile strength 11.8 N/mm2, elongation 439%, Shore A hardness 55, compression set (24 h, 70.degree.) 5.6%, swelling in H2O (168 h, 70.degree.) 2.1%, and increase in tensile strength 7% and elongation 1% after 7 days in air at 70.degree.; vs. 11.6, 517, 55, 7.0, 2.9, 5, and 3, resp., without I.
 ST vulcanization accelerator nitrosamine free; MBTS vulcanization accelerator; dithiocarbonate vulcanization accelerator; benzothiazolethiol vulcanization accelerator; dithiobiscaprolactam vulcanization accelerator; thiuram polysulfide vulcanization accelerator; xanthogen polysulfide vulcanization accelerator
 IT Vulcanization accelerators and agents
 (nitrosamine-free, for **rubbers** for use in roller cages)
 IT Sealing compositions
 (**rubber**, nitrosamine-free vulcanization accelerators for)
 IT **Rubber**, butadiene-styrene, miscellaneous
 RL: MSC (Miscellaneous)
 (vulcanization accelerators for, nitrosamine-free, for use in roller cages)
 IT Sulfenamides
 RL: USES (Uses)
 (vulcanization accelerators, for **rubbers** for roller cages)
 IT Amides, uses
 RL: USES (Uses)
 (polythiobis-, vulcanization accelerators, for **rubbers** for roller cages)
 IT 9003-55-8
 RL: USES (Uses)
 (**rubber**, vulcanization accelerators for, nitrosamine-free, for use in roller cages)
 IT 95-33-0 120-78-5, MBTS **10591-85-2**, Tetrabenzylthiuram disulfide 14726-36-4 20231-01-0 23847-08-7 55518-81-5 137398-54-0, Robac AS 100
 RL: USES (Uses)
 (**vulcanization** accelerators, for **rubbers** for roller cages)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (**vulcanization** accelerators, for **rubbers** for roller cages)

CN Thioperoxydicarbonic diamide ([(H₂N)C(S)]₂S₂), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 34 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1991:658101 HCAPLUS

DN 115:258101

TI Lightly-curing vulcanizates without nitrosamine toxicity

IN Graebner, Friedrich Wilhelm; Fabienke, Eberhard

PA Phoenix A.-G., Fed. Rep. Ger.

SO Ger. Offen., 5 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C08L021-00

ICS C08J003-24; C08K013-02

ICI C08L021-00, C08L007-00, C08L009-00, C08L009-06, C08L009-02, C08L011-00;
 C08K013-02, C08K003-04, C08K003-06, C08K003-22, C08K005-47, C08K005-44,
 C08K005-43, C08K005-40, C08K005-39, C08K005-3437, C08K005-3462

CC 39-9 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4036420	A1	19910523	DE 1990-4036420	19901115
PRAI	DE 1989-3938407		19891118		
	DE 1989-3939713		19891201		

AB The title vulcanizates, useful as additives for automobile lugs, based on natural, isoprene, butadiene, neoprene, SBR, or nitrile rubber or their blends, contain rubber 100, middle- or low-activity carbon black 10-100, Zn 2-ethylhexanoate (I) and/or Zn stearate and/or stearic acid 0.5-5, softener 0-50, softener 0-50, p-phenylenediamine- and/or polyalkyldihydroquinoline-type antiaging agent 0.5-4, ZnO 2-10, R₁R₂NC(S)SnC(S)NR₃R₄ [sum R₁-R₄] .gtoreq. 16 C-at.; n .gtoreq. 1] and/or [R₁R₂NC(S)S]nM (sum R₁,R₂ .gtoreq. 8 C-atoms) vulcanizing agent 0.2-3, N-tert-butyl-2-benzothiazolesulfenamide (II) and/or equiv. another sulfenamide 0--2.5, MBT and/or 4 its salt and/or its disulfide 0-3, S 0.2-2, R₁(R₂CO)NSnN(COR₃)R₄ [sum S(R₁-R₄) .gtoreq. 4 atoms n .gtoreq. 1], and other additives to 90 parts. Thus, a vulcanizate was prepd. from a compn. contg. polyisoprene 50 and natural rubber 50 parts contg. additives carbon black 22, I 1, ozone wax 3, N-isopropyl-N'-phenyl-p-phenylenediamine 1.2, poly(2,2,4-trimethyl-1,2-dihydroquinoline) 0.5, ZnO 5.0, II 1.2, tetrabenzylthiram disulfide (III) 0.9, N,N'-bis(caprolactam) disulfide (IV) 0.3, and S 0.9 phr. The rubber showed tensile strength (DIN 53504) 27.0 N/mm², tensile elongation 593%, Shore A hardness 48, ozone resistance 0 vs. 25.8, 569, 49, and 0 for a control contg. no III or IV but 1.5 parts N-oxydiethylenethiocarbamoyl-N'-oxydiethylenesulfenamide and 0.7 part ZnO.

ST automobile lug rubber; thiuram sulfide vulcanizing agent; dithiocarbamate zinc vulcanizing agent; nontoxic vulcanizing agent polyisoprene natural rubber

IT **Rubber**, butadiene, uses and miscellaneous
Rubber, butadiene-styrene, uses and miscellaneous
Rubber, isoprene, uses and miscellaneous
Rubber, natural, uses and miscellaneous
Rubber, neoprene, uses and miscellaneous
Rubber, nitrile, uses and miscellaneous

RL: USES (Uses)

(lightly-cured, nontoxic, vulcanizing agents for, sulfur- and

IT Automobiles
(lugs, lightly cured nontoxic vulcanizate additives for, vulcanizing agents for, nitrogen- and sulfur-contg.)

IT Vulcanization accelerators and agents
(sulfur- and nitrogen-contg. compds., for lightly-cured nontoxic compns. for automobile lugs additives)

IT Amines, uses and miscellaneous
RL: USES (Uses)
(N-nitroso, vulcanizates prepd. in absence of, nontoxic, sulfur- and nitrogen-contg. vulcanizing agents for, for automobile lugs)

IT 9003-17-2 9003-18-3 9003-31-0 9003-55-8 9010-98-4
RL: USES (Uses)
(**rubber**, lightly-cured, nontoxic, vulcanizing agents for, sulfur- and nitrogen-contg.)

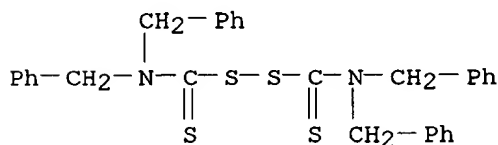
IT 504-90-5D, Thioperoxydicarbonic diamide ($[(H_2N)C(S)]_2S_2$), hydrocarbyl derivs.
RL: USES (Uses)
(vulcanizing agents, for lightly-cured nontoxic additives for automobile lugs)

IT 594-07-0D, Dithiocarbamic acid, hydrocarbyl derivs., salts
10591-85-2, Tetrabenzylthiuram disulfide 14726-36-4 20231-01-0
23847-08-7 55518-81-5
RL: USES (Uses)
(**vulcanizing** agents, for lightly-cured nontoxic **vulcanizates** for automobile lugs)

IT **10591-85-2**, Tetrabenzylthiuram disulfide
RL: USES (Uses)
(**vulcanizing** agents, for lightly-cured nontoxic **vulcanizates** for automobile lugs)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ($[(H_2N)C(S)]_2S_2$), tetrakis(phenylmethyl)-
(9CI) (CA INDEX NAME)



o L10 ANSWER 35 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1991:610008 HCAPLUS

DN 115:210008

TI Vulcanizates with neutral taste properties and no nitrosamine contamination

IN Graebner, Friedrich Wilhelm; Fabienke, Eberhard

PA Phoenix A.-G., Fed. Rep. Ger.

SO Ger. Offen., 4 pp.
CODEN: GWXXBX

DT Patent

LA German

IC ICM C08L021-00
ICS C08K013-02; C08J003-24

ICA C08L023-16; C08L071-02

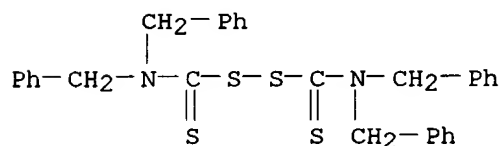
ICI C08K013-02, C08K005-39; C08K005-40, C08K005-43, C08K005-44, C08K005-47, C08K005-01, C08K005-09, C08K005-3462, C08K005-29, C08K003-00, C08K003-04, C08K003-06, C08K003-22, C08K003-26

CC 39-10 (Synthetic Elastomers and Natural Rubber)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4037756	A1	19910606	DE 1990-4037756	19901128
PRAI	DE 1989-3939416		19891129		
AB	The title vulcanizates are prepd. from rubbers or rubber blends contg.				

[R1R2NC(S)S]M (no. of C in R .gtoreq.8, M = metal atom), and/or
R2CON(R1)Sn(R4)COR3 (no. of C in R .gtoreq.4, n .gtoreq.1). Compounded
EPDM contg. [Me2NC(S)]2S 0.8, [Me2NC(S)]2S2 1, and (PhN(Et)CS2)2Zn 0.8 phr
gave vulcanizates with Shore A hardness 70, 300% modulus 11.0 N/mm2,
tensile strength 11.4 N/mm2, elongation 317%, cut growth resistance 5.2
N/mm, and taste transfer to H2O (16 h, 85.degree., 0 least, 3 most) 1.
ST vulcanizing agent rubber taste free; nitrosamine free rubber vulcanizate;
thiuram sulfide vulcanizing agent; dithiocarbamate zinc vulcanizing agent;
amide thiobis zinc vulcanizing agent
IT Vulcanization accelerators and agents
(thiuram sulfides, dithiocarbamates and thiobisamides, for
nitrosamine-free vulcanizates with neutral taste)
IT **Rubber**, synthetic
RL: USES (Uses)
(EPDM, taste-neutral vulcanizates, nitrosamine-free, compounding for)
IT 74-85-1
RL: USES (Uses)
(**rubber**, EPDM, taste-neutral vulcanizates, nitrosamine-free,
compounding for)
IT 137-26-8, Tetramethylthiuram disulfide **10591-85-2** 14634-93-6
14726-36-4 20231-01-0 23847-08-7 55518-81-5
RL: USES (Uses)
(**vulcanization** accelerators, for **vulcanizates** with
neutral taste and no nitrosamines)
IT 97-74-5, Tetramethylthiuram monosulfide
RL: USES (Uses)
(vulcanization accelerators, for vulcanizates with neutral tastes and no
nitrosoamines)
IT **10591-85-2**
RL: USES (Uses)
(**vulcanization** accelerators, for **vulcanizates** with
neutral taste and no nitrosamines)
RN 10591-85-2 HCAPLUS
CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
(9CI) (CA INDEX NAME)



L10 ANSWER 36 OF 48 HCAPLUS COPYRIGHT 2000 ACS
AN 1991:473470 HCAPLUS
DN 115:73470
TI Vulcanization of EPDM without risk of toxic nitrosoamines
IN Graebner, Friedrich Wilhelm; Fabienke, Eberhard
PA Phoenix A.-G., Fed. Rep. Ger.
SO Ger. Offen., 5 pp.
CODEN: GWXXBX
DT Patent
LA German
IC ICM C08L023-16
ICS C08K013-02
ICA C08J003-24; B29C035-02
ICI C08K013-02, C08K003-04; C08K003-06, C08K003-22, C08K003-26, C08K005-01,
C08K005-09, C08K005-34, C08K005-39, C08K005-40, C08K005-43, C08K005-47,
C08K005-5398
CC 39-10 (Synthetic Elastomers and Natural Rubber)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4027114	A1	19910328	DE 1990-4027114	19900828

DE 1989-3933438 19891006
 DE 1989-3935688 19891026
 DE 1989-3939712 19891201

AB In the title process, EPDM is vulcanized in the presence of di-Bu Zn dithiophosphate (I) and/or other dithiophosphates 0.5-4, thiuram sulfides and/or metal dithiocarbamates 0.7-5, 2-mercaptobenzothiazole (II) and/or its salts or disulfide 2-4, amides R2CON(R1)SnN(R4)COR3 (R1-4 = C.ltoreq.4 hydrocarbyl, n .gtoreq. 1) 0.5-4, and S 0-2.8 phr. Compounded, oil-extended (50%) EPDM contg. I 1.1, Zn dibenzylidithiocarbamate 1.5, N,N'-dithiobiscaprolactam 3.0, II 2.0, and S 0.5 phr gave vulcanizates with tensile strength 9.3 N/mm2 after 0 or 100 h at 168.degree., elongation 412 and 325% resp., 300% modulus 6.5 N/mm2, Shore A hardness 64, rebound resilience 41%, and compression set (70.degree., 100 h) 35%.

ST vulcanization EPDM nitrosoamine free; dithiophosphate butyl zinc vulcanization; dithiocarbamate zinc vulcanization; dithiobiscaprolactam vulcanizing agent; mercaptobenzothiazole vulcanizing agent; thiuram sulfide vulcanizing agent

IT Vulcanization accelerators and agents
 (nitrosoamine-free, dithiophosphates, dithiocarbamate derivs., mercaptobenzothiazole derivs. and dithiobiscaprolactam, for EPDM)

IT **Rubber**, synthetic
 RL: USES (Uses)
 (EPDM, vulcanization accelerators for, nitrosoamine-free, dithiophosphates, dithiocarbamate derivs., percaptobenzothiazole derivs. and dithiobiscaprolactam as)

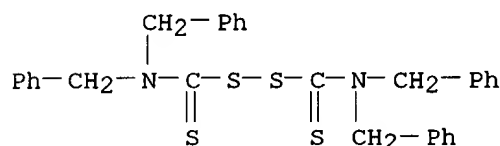
IT 74-85-1
 RL: USES (Uses)
 (**rubber**, EPDM, vulcanization accelerators for, nitrosoamine-free, dithiophosphates, dithiocarbamate derivs., percaptobenzothiazole derivs. and dithiobiscaprolactam as)

IT 120-78-5, 2,2'-Dithiobisbenzothiazole 149-30-4, 2-Benzothiazolethiol 6990-43-8 **10591-85-2**, Tetrabenzylthiuramdisulfide 14726-36-4, Zinc dibenzylidithiocarbamate 23847-08-7
 RL: USES (Uses)
 (**vulcanization** accelerators, for EPDM)

IT **10591-85-2**, Tetrabenzylthiuramdisulfide
 RL: USES (Uses)
 (**vulcanization** accelerators, for EPDM)

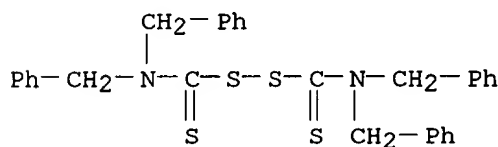
RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 37 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1991:410654 HCAPLUS
 DN 115:10654
 TI Vulcanizable rubber compositions free of nitrosamines
 IN Engels, Wilhelm; Eholzer, Ulrich; Kempermann, Theo; Schubart, Ruediger; Abele, Manfred
 PA Bayer A.-G., Fed. Rep. Ger.
 SO Eur. Pat. Appl., 12 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 IC ICM C08L023-16
 ICS C08L023-22; C08L015-00; C08K005-5398; C08K005-39; C08K005-47
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

PI EP 406603 A2 19910109 EP 1990-111387 19900616
R: DE, FR, GB, IT
DE 3921742 A1 19910110 DE 1989-3921742 19890701
DE 4013336 A1 19911031 DE 1990-4013336 19900426
PRAI DE 1989-3921742 19890701
DE 1990-4013336 19900426
OS MARPAT 115:10654
AB The title rubbers contain nonblooming mixts. of S 1-2, dialkoxyphosphoryl trisulfides 1-5, and the accelerators [(RC6H4CH2)2NCS2]2Zn, [(RC6H4CH2)2NCS2]2 (R = H, alkyl, Ph), and/or alkanolamine salts of 2-mercaptobenzothiazole 0.5-5 phr. A mixt. of compounded EPDM 307, [(EtO)2PS]2S3 1.0, [(PhCH2)2NCS2]2Zn 1.5, S 2.0, and MBTS 1.5 parts had scorch time (120.degree.) 22 min, vulcanization time (t90, 160.degree.) 11.4 min, and gave vulcanizates with tensile strength 10.6 MPa, elongation 410%, 300% modulus 8.8 MPa, Shore A hardness 65, and compression set (70 h, 100.degree.) 82%.
ST vulcanization accelerator nitrosamine free; EPDM vulcanization accelerator; zinc dithiocarbamate vulcanization accelerator; thiuram disulfide vulcanization accelerator; thiophosphoryl trisulfide vulcanization accelerator; benzothiazolethiol alkanolamine salt vulcanization
IT Vulcanization accelerators and agents
(dithiocarbamic acid derivs. and dialkoxyphosphoryl trisulfides and mercaptobenzothiazole alkanolamine salts, nitrosamine-free)
IT **Rubber**, synthetic
RL: USES (Uses)
(EPDM, vulcanization accelerators for, nitrosamine-free)
IT Alcohols, compounds
(amino, compds., with mercaptobenzothiazole, vulcanization accelerators for unsatd. **rubbers**)
IT 74-85-1
RL: USES (Uses)
(**rubber**, EPDM, vulcanization accelerators for, nitrosamine-free)
IT 25038-36-2
RL: USES (Uses)
(**rubber**, vulcanization accelerators for, nitrosamine-free)
IT 5902-85-2, 2-Mercaptobenzylthiazole ethanolamine salt 6990-43-8, Zinc dibutyldithiophosphate **10591-85-2** 14726-36-4, Zinc dibenzylidithiocarbamate 81167-03-5, Bis(diethoxyphosphoryl)trisulfide
RL: USES (Uses)
(vulcanization accelerators, nitrosamine-free, for unsatd. **rubbers**)
IT **10591-85-2**
RL: USES (Uses)
(vulcanization accelerators, nitrosamine-free, for unsatd. **rubbers**)
RN 10591-85-2 HCAPLUS
CN Thioperoxydicarbonic diamide [(H2N)C(S)]2S2, tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 38 OF 48 HCAPLUS COPYRIGHT 2000 ACS
AN 1991:209076 HCAPLUS
DN 114:209076
TI Nitrosatable-free vulcanizing systems for rubbers
IN Stevenson, Arthur; Virdi, Ranvir Singh

SO Eur. Pat. Appl., 8 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM C08L021-00
 ICS C08K005-38; C08K005-40
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 413504	A1	19910220	EP 1990-308735	19900808
	EP 413504	B1	19970514		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 153046	E	19970515	AT 1990-308735	19900808
	US 5254635	A	19931019	US 1990-566838	19900813
	CA 2023527	AA	19910219	CA 1990-2023527	19900817
	JP 03091501	A2	19910417	JP 1990-217975	19900817
PRAI	GB 1989-18890		19890818		
	GB 1989-25415		19891110		

AB The title systems comprise a mixt. of dibenzylthiuram sulfide and dihydroxycarbyl xanthogen polysulfide, and a xanthate. The vulcanized rubbers can be used in the form intended for or adapted to skin contact. Thus, a base mix comprising premasticated pale crepe 100, antioxidant 2246 1.0, stearic acid 0.8, ZnCO₃ 1.5, and S 2.0 parts was compounded with 1.5 parts diisopropyl xanthogen polysulfide and 0.5 part tetrabenzylthiuram disulfide (I) and tested showing time to 50% cure 5.54 min, time to 90% cure 6.46 min, max. torque 41.4, highest cure rate 0.43, unaged tensile strength 18 MPa, unaged elongation 840%, tensile strength change after aging -0.3, and elongation change after aging -340%, compared with 4.39, 5.31, 33.0, 0.34, 12.6, 920, -5.8, and -20, resp., for a similar compn. without I.

ST vulcanization accelerator hydrocarbyl xanthogen polysulfide; benzylthiuram sulfide vulcanization accelerator rubber; xanthate vulcanization accelerator rubber

IT Polysulfides

RL: USES (Uses)

(benzylthiocarbamoyl, vulcanization accelerators and agents, for rubbers)

IT Vulcanization accelerators and agents

(dibenzylthiuram sulfide and dihydrocarbyl xanthogen polysulfide and xanthate, for rubbers)

IT Rubber, natural, uses and miscellaneous

Rubber, synthetic

RL: USES (Uses)

(vulcanization accelerators and agents for, dibenzylthiuram sulfide and dihydrocarbyl xanthogen polysulfide and xanthates as)

IT 1000-90-4, Zinc isopropyl xanthate 10591-85-2,

Tetrabenzylthiuram disulfide 14726-36-4 21075-91-2 69303-50-0

RL: USES (Uses)

(vulcanization accelerators and agents, for rubbers)

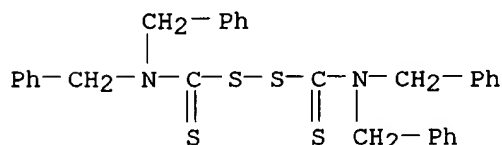
IT 10591-85-2, Tetrabenzylthiuram disulfide

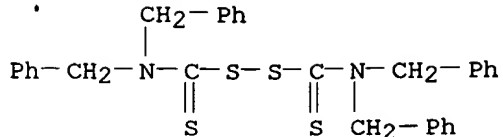
RL: USES (Uses)

(vulcanization accelerators and agents, for rubbers)

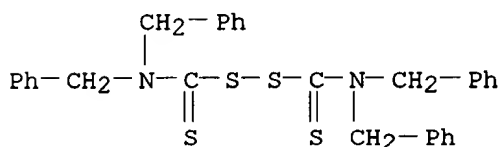
RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H₂N)C(S)]₂S₂), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)





L10 ANSWER 39 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1991:145197 HCAPLUS
 DN 114:145197
 TI A new safe thiuram, tetrabenzyl thiuram disulfide
 AU Seeberger, D. B.
 CS Akzo Chem., USA
 SO Rubber World (1990), 202(5), 18-21
 CODEN: RUBWAQ; ISSN: 0035-9572
 DT Journal
 LA English
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 AB Tetrabenzylthiuram disulfide (I) contains only small quantities of its related nitrosamine, which is relatively nonvolatile and noncarcinogenic, and it does not readily form addnl. nitrosamine under normal vulcanization conditions nor during storage of its vulcanizates in absence of nitrosating agents. Although the mol. wt. of I is relatively high, its use in a rubber formulation in a 1:1 ratio by wt. in comparison to existing thiurams worked well when a small addnl. amt. of free S was added in vulcanization systems.
 ST benzylthiuram disulfide vulcanization system safety
 IT Safety
 (in vulcanization systems using tetrabenzylthiuram disulfide)
 IT Vulcanization accelerators and agents
 (tetrabenzylthiuram disulfide, safety and properties of)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (vulcanization agents, safety and properties of)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (vulcanization agents, safety and properties of)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H₂N)C(S)]₂S₂), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 40 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1990:218496 HCAPLUS
 DN 112:218496
 TI Concepts in the development of new curing agents for reducing nitrosamine formation in elastomeric compounds
 AU Seeberger, D.
 CS Akzo Chem. G.m.b.H., Dueren, Fed. Rep. Ger.
 SO Kautsch. Gummi, Kunstst. (1989), 42(10), 875-7
 CODEN: KGUKAC; ISSN: 0022-9520
 DT Journal
 LA English
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 AB Government regulations in the 1980's have restricted com. chems. and materials that contain trace contaminants with proven carcinogenic potential in animal tests. The presence or formation of nitrosamines (I) in rubber chems., formation of I during vulcanization or storage, and

development of tetrabenzylthiuram disulfide (II) as a non-volatile, non-hazardous accelerator to replace TMTD (III) was discussed, and the phys. properties of elastomers cured by II were comparable to those obtained using III.

ST vulcanization accelerator tetrabenzylthiuram disulfide; nitrosamine formation vulcanization elastomer

IT Vulcanization accelerators and agents
(tetrabenzylthiuram disulfide, with reduced formation of nitrosamines)

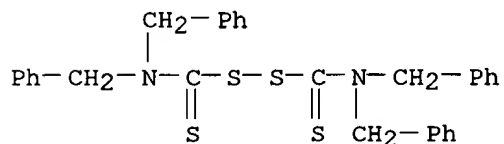
IT Amines, preparation
RL: PREP (Preparation)
(N-nitroso, reduced formation of, in vulcanization of **rubbers** in presence of tetrabenzylthiuram disulfide)

IT **10591-85-2**
RL: USES (Uses)
(**vulcanization** accelerator, with reduced formation of nitrosamines)

IT **10591-85-2**
RL: USES (Uses)
(**vulcanization** accelerator, with reduced formation of nitrosamines)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)



L10 ANSWER 41 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1990:181122 HCAPLUS

DN 112:181122

TI A new thiuram acceleration without dangerous and volatile nitrosamines

AU Kuhlmann, T.

CS Rubber Div., Carl Freudenberg, Weinheim, Fed. Rep. Ger.

SO Kautsch. Gummi, Kunstst. (1989), 42(10), 878-9
CODEN: KGUKAC; ISSN: 0022-9520

DT Journal

LA English

CC 39-10 (Synthetic Elastomers and Natural Rubber)

AB Tetrabenzylthiuram disulfide was developed in which only small amts. of a noncarcinogenic, nonvolatile and water-insol. nitrosamine are formed. No blooming appears and the curing and mech. properties are comparable with methylphenylthiuram disulfide.

ST benzylthiuram disulfide vulcanization accelerator

IT **Rubber**, nitrile, uses and miscellaneous
RL: USES (Uses)
(dibenzylthiuram disulfide vulcanization accelerator for carbon-filled, vulcanizate rheol. properties in relation to)

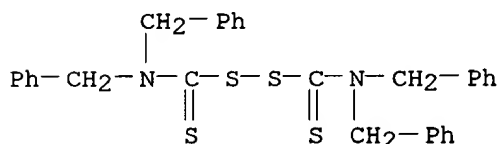
IT **Rubber**, butadiene-styrene, uses and miscellaneous
RL: USES (Uses)
(dibenzylthiuram disulfide vulcanization accelerator for, vulcanizate rheol. properties in relation to)

IT Vulcanization accelerators and agents
(dibenzylthiuram disulfide, without dangerous and volatile nitrosamines, vulcanizate rheol. properties in relation to)

IT Minerals
RL: USES (Uses)
(nitrile **rubber** filled with, dibenzylthiuram disulfide vulcanization accelerator for, vulcanizate rheol. properties in relation to)

IT 7440-44-0, Carbon, uses and miscellaneous

RL: USES (Uses)
 (nitrile **rubber** filled with, dibenzylthiuram disulfide
 vulcanization accelerator for, vulcanizate rheol. properties in
 relation to)
 IT 9003-18-3
 RL: USES (Uses)
 (**rubber**, dibenzylthiuram disulfide vulcanization accelerator
 for carbon-filled, vulcanizate rheol. properties in relation to)
 IT 9003-55-8
 RL: USES (Uses)
 (**rubber**, dibenzylthiuram disulfide vulcanization accelerator
 for, vulcanizate rheol. properties in relation to)
 IT 10591-84-1
 RL: USES (Uses)
 (vulcanization accelerators, vulcanizate rheol. properties in relation
 to)
 IT **10591-85-2**
 RL: USES (Uses)
 (**vulcanization** accelerators, without dangerous and volatile
 nitrosamines, **vulcanizate** rheol. properties in relation to)
 IT **10591-85-2**
 RL: USES (Uses)
 (**vulcanization** accelerators, without dangerous and volatile
 nitrosamines, **vulcanizate** rheol. properties in relation to)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide [(H₂N)C(S)]₂S₂, tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)

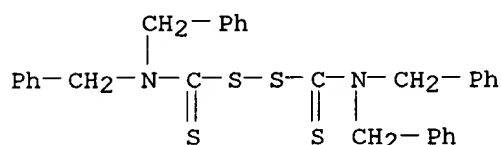


L10 ANSWER 42 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1989:77298 HCAPLUS
 DN 110:77298
 TI Noncarinogenic vulcanization accelerators
 IN Kuhlmann, Thomas; Von Arndt, Ernst Moritz
 PA Freudenberg, Carl, K.-G., Fed. Rep. Ger.
 SO Ger. Offen., 8 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C08L021-00
 ICS C08K005-40; C08J003-24
 ICI C08J003-24, C08K005-40; C08L021-00
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3709311	A1	19880929	DE 1987-3709311	19870321
	EP 283552	A1	19880928	EP 1987-111944	19870818
	R: AT, BE, DE, ES, FR, GB, IT, NL, SE				
	JP 63238144	A2	19881004	JP 1988-12420	19880122
	BR 8800242	A	19881011	BR 1988-242	19880125
PRAI	DE 1987-3709311		19870321		

AB The use of tetrabenzylthiuram disulfide (I) as a vulcanization accelerator
 prevents the formation of carcinogenic nitrosamines. Compounded nitrile
 rubber contg. 3.0 phr I gave off no detectable volatile nitrosamines, vs.
 18 .mu.g/m³ with dimethyldiphenylthiuram disulfide (II) in place of I.
 The compn. contg. I gave vulcanizates with Shore A hardness 49, 300%
 modulus 2.8 MPa, tensile strength 8.8 MPa, and elongation 726%; vs. 54,
 5.0, 8.5, and 501, resp., with II in place of I.

vulcanization; nitrile rubber vulcanization accelerator
 IT Vulcanization accelerators and agents
 (tetrabenzylthiuram disulfide, noncarcinogenic)
 IT **Rubber**, nitrile, uses and miscellaneous
 RL: USES (Uses)
 (vulcanization accelerators for, noncarcinogenic, tetrabenzylthiuram
 disulfide as)
 IT 9003-18-3
 RL: USES (Uses)
 (**rubber**, vulcanization accelerators for, noncarcinogenic,
 tetrabenzylthiuram disulfide as)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (**vulcanization** accelerators, noncarcinogenic)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (**vulcanization** accelerators, noncarcinogenic)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)

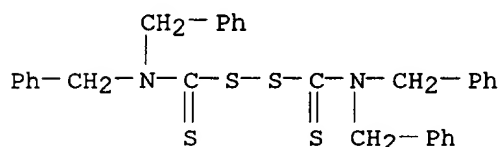


L10 ANSWER 43 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1989:77297 HCAPLUS
 DN 110:77297
 TI Nonblooming vulcanization accelerators
 IN Kuhlmann, Thomas; Von Arndt, Ernst Moritz
 PA Freudenberg, Carl, K.-G., Fed. Rep. Ger.
 SO Ger. Offen., 4 pp.
 CODEN: GWXXBX
 DT Patent
 LA German
 IC ICM C08L021-00
 ICS C08K005-40; C08J003-24
 ICI C08J003-24, C08K005-40; C08L021-00
 CC 39-10 (Synthetic Elastomers and Natural Rubber)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3709313	A1	19880929	DE 1987-3709313	19870321
	EP 284650	A1	19881005	EP 1987-112196	19870822
	R: AT, BE, DE, ES, FR, GB, IT, NL, SE				
	JP 63238146	A2	19881004	JP 1988-12422	19880122
	BR 8800250	A	19880927	BR 1988-250	19880125
PRAI	DE 1987-3709313		19870321		

AB The use of tetrabenzylthiuram disulfide (I) as a vulcanization accelerator prevents blooming and allergic reactions. Compounded nitrile rubber contg. 3.0 phr I showed no blooming after 6 wk storage (vs. 90% with tetramethylthiuram disulfide in place of I), and compds. contg. I caused no allergies.
 ST vulcanization accelerator nonblooming nonallergenic; allergy prevention vulcanization accelerator; nitrile rubber vulcanization accelerator; tetrabenzylthiuram disulfide vulcanization accelerator
 IT Vulcanization accelerators and agents
 (tetrabenzylthiuram disulfide, nonblooming and nonallergenic)
 IT **Rubber**, nitrile, uses and miscellaneous
 RL: USES (Uses)
 (vulcanization accelerators for, tetrabenzylthiuram disulfide as)

IT 9003-18-3
 RL: USES (Uses)
 (**rubber**, vulcanization accelerators for, tetrabenzylthiuram disulfide as nonblooming and nonallergenic)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (**vulcanization** accelerators, nonblooming and nonallergenic)
 IT **10591-85-2**, Tetrabenzylthiuram disulfide
 RL: USES (Uses)
 (**vulcanization** accelerators, nonblooming and nonallergenic)
 RN 10591-85-2 HCAPLUS
 CN Thioperoxydicarbonic diamide ([$(\text{H}_2\text{N})\text{C}(\text{S})_2\text{S}_2$), tetrakis(phenylmethyl)-(9CI) (CA INDEX NAME)

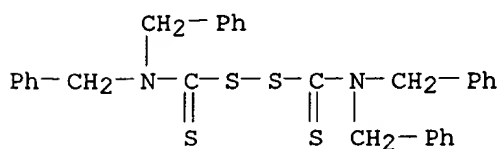


L10 ANSWER 44 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1979:458435 HCAPLUS
 DN 91:58435
 TI Determination of the vulcanization accelerator tetrabenzylthiuram disulfide and some of its reaction products in sanitary-chemical studies of rubbers
 AU Grushevskaya, N. Yu.
 CS Vses. Nauchno-Issled. Inst. Gig. Toksikol. Pestitsid. Polim. Plast. Mass, Kiev, USSR
 SO Kauch. Rezina (1979), (5), 47-9
 CODEN: KCRZAE; ISSN: 0022-9466
 DT Journal
 LA Russian
 CC 38-11 (Elastomers, Including Natural Rubber)
 Section cross-reference(s): 80
 AB No migration of tetrabenzylthiuram disulfide (I) [**10591-85-2**] or its S-contg. reaction products, e.g., CS₂ [75-15-0], zinc dibenzylidithiocarbamate [14726-36-4], or dibenzylamine dibenzylidithiocarbamate [66216-84-0] from SKN-26 or natural rubber **vulcanizes** into H₂O or model liqs. imitating fruit juices was found. However, dibenzylamine [103-49-1] was found in the amts. of 0.03-0.10 mg/L. I and its reaction products were detd. in aq. exts. of the rubber **vulcanizes** by TLC. and colorimetry.
 ST benzylthiuram rubber ext analysis; vulcanization accelerator migration beverage; zinc benzylidithiocarbamate rubber migration; benzylamine migration nitrile rubber; chromatog vulcanization accelerator rubber; carbon disulfide rubber migration
 IT **Rubber**, natural, analysis
Rubber, nitrile, analysis
 RL: ANST (Analytical study)
 (tetrabenzylthiuram disulfide and derivs. detn. in aq. exts. of, by thin-layer chromatog. and colorimetry)
 IT Vulcanization accelerators
 (tetrabenzylthiuram disulfide, migration of, from **rubber** vulcanizes)
 IT 75-15-0, analysis **10591-85-2** 14726-36-4 66216-84-0
 RL: ANT (Analyte); ANST (Analytical study)
 (detn. of, in aq. exts. of **rubber vulcanizes**, migration in relation to)
 IT 103-49-1
 RL: USES (Uses)
 (migration of, into water, from natural and nitrile **rubber** vulcanizes, detn. of)

RL: ANT (Analyte); ANST (Analytical study)
 (detrn. of, in aq. exts. of **rubber vulcanizates**,
 migration in relation to)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H2N)C(S)]2S2), tetrakis(phenylmethyl)-
 (9CI) (CA INDEX NAME)



L10 ANSWER 45 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1977:18094 HCAPLUS

DN 86:18094

TI Method for crosslinking rubber with polysulfides

IN Trivette, Chester D., Jr.

PA Monsanto Co., USA

SO U.S., 39 pp. Division of U.S. 3,869,435.

CODEN: USXXAM

DT Patent

LA English

IC C08C011-60

NCL 260079500C

CC 38-10 (Elastomers, Including Natural Rubber)

Section cross-reference(s): 23, 25, 27, 28

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3979369	A	19760907	US 1974-507763	19740920
	US 3869435	A	19750304	US 1971-200595	19711119
PRAI	US 1971-200595		19711119		

AB Rubbers are crosslinked using (RSSx)nZ (R = accelerating moiety; Z = org. bridging group; x = 1 or 2; n .gtoreq.2) as vulcanization accelerators and vulcanizing agents. Thus, natural rubber vulcanized using 1,2-bis(N,N-dimethylthiocarbamoyldithio)ethane [41538-17-4], prepd. by the reaction of 1,2-ethanedisulphenyl chloride [24127-98-8] with sodium dimethyldithiocarbamate [128-04-1], had 121.degree. t5 Mooney scorch 41.0 min, cure time 120 min, 300% modulus 1530 psi, ultimate tensile strenth 2540 psi, and ultimate elongation 400%, compared with 32.0, 30, 1450, 3840, and 550, resp., for the rubber vulcanized using Santocure NS.

ST rubber vulcanizing agent polysulfide; vulcanization accelerator rubber polysulfide

IT Vulcanization accelerators
 Vulcanizing agents

(heterocyclic bisdisulfides and thiocarbamoyl polysulfides as)

IT **Rubber**, isoprene
Rubber, synthetic

RL: USES (Uses)

(vulcanization accelerators and vulcanizing agents for)

IT **Rubber**, butadiene
Rubber, butadiene-styrene
Rubber, natural
Rubber, neoprene
Rubber, nitrile

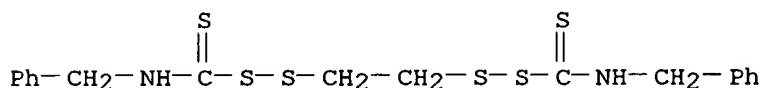
(uses and miscellaneous, vulcanization accelerators and vulcanizing agents for)

IT **Rubber**, butyl
 (uses and miscellaneous, chlorinated, and, vulcanization accelerators and vulcanizing agents for)

IT 42938-01-2P 42938-02-3P 42938-03-4P 42938-04-5P 42938-06-7P

42938-22-7P 42938-27-2P 42938-33-0P 42938-36-3P
 42938-38-5P 42938-46-5P 42938-49-8P 42938-50-1P 42938-53-4P
 42938-56-7P 42938-57-8P 42938-58-9P 42938-62-5P 42938-67-0P
 42938-68-1P 42938-69-2P 42938-70-5P 42938-72-7P 42938-73-8P
 42938-74-9P 42938-75-0P 43031-08-9P 43031-09-0P 49852-89-3P
 53551-65-8P 61280-01-1P
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (prepn. of)
 IT 42937-97-3
 RL: RCT (Reactant)
 (reaction of, with benzothiazolylsulfenyl chloride)
 IT 2391-78-8
 RL: RCT (Reactant)
 (reaction of, with bisethanethiosulfenyl chloride)
 IT 496-74-2
 RL: RCT (Reactant)
 (reaction of, with chlorine)
 IT 5210-79-7
 RL: RCT (Reactant)
 (reaction of, with dibromoethane-sodium thiosulfate di-Bunte salt)
 IT 24678-65-7
 RL: RCT (Reactant)
 (reaction of, with dichlorobutene-sodium thiosulfate Bunte salt)
 IT 24127-98-8
 RL: RCT (Reactant)
 (reaction of, with diethyl dithiocarbamic acid triethylamine salt)
 IT 4208-42-8
 RL: RCT (Reactant)
 (reaction of, with dinitrobenzenesulfenyl chloride)
 IT 33405-92-4
 RL: RCT (Reactant)
 (reaction of, with diphenyldithiolpropane)
 IT 96-53-7 128-04-1 583-39-1 2382-96-9 2637-34-5 5115-14-0
 5210-78-6 5685-06-3 6336-51-2 14353-59-4D, amine salt 17309-13-6
 22325-27-5 42937-91-7 51800-48-7 53551-60-3 61280-03-3
 RL: RCT (Reactant)
 (reaction of, with ethanedisulfenyl chloride)
 IT 528-76-7 10545-99-0 26542-76-7
 RL: RCT (Reactant)
 (reaction of, with ethanedithiol)
 IT 2757-23-5
 RL: RCT (Reactant)
 (reaction of, with ethanedithiol and ethanol and morpholine)
 IT 24127-98-8
 RL: RCT (Reactant)
 (reaction of, with heterocyclic thiols and dithiocarbamic acid salts)
 IT 35792-39-3 42937-79-1 42937-80-4 42937-81-5 42937-82-6
 42937-83-7 42937-84-8 42937-85-9 42937-87-1
 RL: RCT (Reactant)
 (reaction of, with mercaptobenzothiazole)
 IT 298-06-6
 RL: RCT (Reactant)
 (reaction of, with mercaptobenzothiazole derivs. and sulfenyl
 chlorides)
 IT 55620-91-2
 RL: RCT (Reactant)
 (reaction of, with mercaptobenzothiazole or ethyl phosphorodithioate)
 IT 3387-00-6
 RL: RCT (Reactant)
 (reaction of, with mercaptodiallylaminotriazine)
 IT 61280-00-0
 RL: RCT (Reactant)
 (reaction of, with sodium hexahydroazepinylthiocarbothiolate)
 IT 42937-86-0
 RL: RCT (Reactant)
 (reaction of, with sodium mercaptobenzothiazole)

RL: RCT (Reactant)
 (reaction of, with sulfenyl chlorides)
 IT 9002-88-4D, chlorosulfonated
 RL: USES (Uses)
 (**rubber**, vulcanization accelerators and vulcanizing agents
 for)
 IT 149-30-4D, reaction products with 1,2-ethanedisulphenyl chloride and ethyl
 phosphorodithioate triethylamine salt 19829-07-3D, reaction products
 with 1,2-ethanedisulphenyl chloride and 2-mercaptobenzothiazole
 24127-98-8D, reaction products with ethyl phosphorodithioate triethylamine
 salt and 2-mercaptobenzothiazole 41538-17-4 42777-12-8 42938-10-3
 42938-11-4 42938-12-5 42938-13-6 42938-14-7 42938-15-8
 42938-16-9 42938-20-5 42938-21-6 42938-23-8 42938-24-9
 42938-25-0 42938-26-1 42938-28-3 42938-29-4 42938-30-7
 42938-31-8 42938-32-9 42938-34-1 42938-35-2 42938-37-4
 42938-39-6 42938-40-9 42938-42-1 42938-43-2 42938-45-4
 42938-47-6 42938-48-7 42938-51-2 42938-52-3 42938-54-5
 42938-59-0 42938-60-3 42938-61-4 42938-63-6 42938-64-7
 42938-65-8 42938-66-9 42938-71-6 42938-76-1 42938-77-2
 42938-78-3 43031-05-6 43031-06-7 43031-07-8 55620-84-3
 55620-86-5 55620-93-4 61275-41-0 61275-42-1 61280-02-2
 61280-04-4
 RL: USES (Uses)
 (vulcanization accelerators and vulcanizing agents)
 IT 1310-73-2, reactions
 RL: RCT (Reactant)
 (with carbon disulfide and dimethylamine)
 IT 124-40-3, reactions
 RL: RCT (Reactant)
 (with carbon disulfide and sodium hydroxide)
 IT 64-17-5, reactions
 RL: RCT (Reactant)
 (with chlorocarbonylsulphenyl chloride and ethanedithiol)
 IT 75-15-0, reactions
 RL: RCT (Reactant)
 (with dimethylamine and sodium hydroxide)
 IT 7782-50-5, reactions
 RL: RCT (Reactant)
 (with dithiols)
 IT **42938-27-2P**
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (prepn. of)
 RN 42938-27-2 HCAPLUS
 CN Carbamo(dithioperoxo)thioic acid, (phenylmethyl)-, 1,2-ethanediyl ester
 (9CI) (CA INDEX NAME)



L10 ANSWER 46 OF 48 HCAPLUS COPYRIGHT 2000 ACS
 AN 1975:444520 HCAPLUS
 DN 83:44520
 TI Vulcanizing rubber
 IN Trivette, Chester D., Jr.
 PA Monsanto Co., USA
 SO U.S., 36 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC C08CDF
 NCL 260079500C
 CC 38-10 (Elastomers, Including Natural Rubber)

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3869435	A	19750304	US 1971-200595	19711119
	DE 2256511	A1	19730530	DE 1972-2256511	19721117
	DE 2256511	C3	19800619		
	DE 2256511	B2	19790927		
	FR 2186970	A5	19740111	FR 1972-40944	19721117
	IT 971005	A	19740430	IT 1972-31828	19721117
	GB 1388279	A	19750326	GB 1972-53224	19721117
	GB 1388280	A	19750326	GB 1973-32030	19721117
	CA 987840	A1	19760420	CA 1972-156900	19721117
	DE 2265382	C2	19840126	DE 1972-2265382	19721117
	JP 48062844	A2	19730901	JP 1972-115252	19721118
	JP 55004136	B4	19800129		
	US 3979369	A	19760907	US 1974-507763	19740920

PRAI US 1971-200595 19711119

AB Bisthiocarbamoyldithio derivs., bisbenzothiazoyldithio derivs., bispyrimidinylidithio derivs., bispyridinylidithio derivs., bistrizinyldithio derivs., biscarbonyldithio derivs., and bisphosphorotrithiyl derivs. were used to vulcanize rubbers with or without S or accelerators. Thus, natural rubber contg. ISAF carbon black, ZnO, stearic acid, hydrocarbon softener, Santoflex 13, and 1,2-bis[(2,6-dimethylmorpholinethiocarbonyldithio)ethane (I) [55620-93-4] exhibited Mooney Scorch 89.0 min (t5) at 121.degree., reversion 0% in 10 min in a rheometer at 164.degree., and ultimate tensile strength 3350 psi at 144.degree. after curing, compared with 32.0 min, 11.2%, and 3840 psi, resp., for a similar compn. contg. no I.

ST vulcanizing agent polysulfide compd; carbamoyldithio deriv vulcanizing agent; benzothiazoyldithio deriv vulcanizing agent; pyrimidinylidithio deriv vulcanizing agents; pyridinylidithio deriv vulcanizing agents; triazinylidithio deriv vulcanizing agent; carbonyldithio deriv vulcanizing agent; phosphorotrithiyl deriv vulcanizing agent; safety rubber vulcanization

IT **Rubber**, synthetic
(chlorosulfonated ethylene and EPDM, vulcanizing agents for, bis(dimethylthiocarbamoyldithio)ethane as)

IT Safety
(in vulcanization of **rubbers**)

IT Vulcanizing agents
(polysulfide compds., for **rubbers**)

IT **Rubber**, butadiene, uses and miscellaneous
Rubber, butadiene-styrene, uses and miscellaneous
Rubber, butyl, uses and miscellaneous
Rubber, nitrile, uses and miscellaneous
(vulcanizing agents for, bis(dimethyldithiocarbamoyldithio)ethane as)

IT **Rubber**, isoprene
Rubber, neoprene, uses and miscellaneous
(vulcanizing agents for, bis(dimethylthiocarbamoyldithio)ethane as)

IT **Rubber**, natural, uses and miscellaneous
(vulcanizing agents for, polysulfide compds. as)

IT 496-74-2 584-04-3 7575-23-7 16170-40-4 55637-29-1
RL: RCT (Reactant)
(chlorination of)

IT 53551-65-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction with carbon disulfide)

IT 42938-01-2P 42938-02-3P 42938-03-4P 42938-04-5P 42938-05-6P
42938-06-7P 42938-07-8P 42938-09-0P 42938-19-2P 42938-22-7P
42938-27-2P 42938-35-2P 42938-38-5P 42938-46-5P
42938-47-6P 42938-53-4P 42938-57-8P 42938-58-9P 42938-62-5P
42938-67-0P 42938-68-1P 42938-69-2P 42938-70-5P 42938-72-7P
42938-73-8P 42938-74-9P 42938-75-0P 42938-77-2P 43031-08-9P
43031-09-0P 49852-89-3P 55620-87-6P 55620-88-7P 55620-92-3P
RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

IT 42937-97-3
RL: RCT (Reactant)
(reaction of, sodium thiosulfate and thiocarbothiolates)

IT 51800-48-7 53551-60-3
RL: RCT (Reactant)
(reaction of, with benzothiazolylsulfenyl chloride)

IT 540-63-6
RL: RCT (Reactant)
(reaction of, with chlorine or sulfenyl chloride derivs.)

IT 4208-42-8
RL: RCT (Reactant)
(reaction of, with dinitrobenzenesulfenyl chloride)

IT 33405-92-4
RL: RCT (Reactant)
(reaction of, with diphenylpropanedithiol)

IT 2391-78-8
RL: RCT (Reactant)
(reaction of, with ethanebis(thiosulfenyl chloride))

IT 96-53-7 128-04-1 140-92-1 149-30-4 583-39-1 2382-96-9
2637-34-5 5115-14-0 5210-78-6 5685-06-3 6336-51-2 6990-43-8
17309-13-6 19829-07-3 22325-27-5 42937-91-7 55620-90-1
RL: RCT (Reactant)
(reaction of, with ethanedisulfenyl chloride)

IT 2465-56-7
RL: RCT (Reactant)
(reaction of, with ethanedisulfenyl chloride or chlorocarbonylsulfenyl chloride-ethanedithio mixt.)

IT 528-76-7 26542-76-7
RL: RCT (Reactant)
(reaction of, with ethanedithiol)

IT 2757-23-5
RL: RCT (Reactant)
(reaction of, with ethanedithiol and morpholine or ethanol)

IT 2492-26-4
RL: RCT (Reactant)
(reaction of, with ethyl bicycloheptanedisulfenyl chloride)

IT 42937-79-1 42937-80-4 42937-81-5 42937-82-6 42937-83-7
42937-84-8 42937-85-9 42937-87-1 55620-94-5
RL: RCT (Reactant)
(reaction of, with mercaptobenzothiazole)

IT 55620-91-2
RL: RCT (Reactant)
(reaction of, with mercaptobenzothiazole or diethyl phosphorodithioate)

IT 298-06-6
RL: RCT (Reactant)
(reaction of, with pentaerythritol mercaptopropionate tetrakis(sulfenyl chloride))

IT 24127-98-8
RL: RCT (Reactant)
(reaction of, with sodium alkyl- or aryldithiocarbamates, morpholine, or mercapto group-contg. compds.)

IT 35792-39-3 42937-86-0 55620-95-6 55637-30-4
RL: RCT (Reactant)
(reaction of, with sodium mercaptobenzothiazole)

IT 5210-79-7
RL: RCT (Reactant)
(reaction of, with sodium thiosulfate and dibromoethane)

IT 24678-65-7
RL: RCT (Reactant)
(reaction of, with sodium thiosulfate and dichlorobutene)

IT 25620-62-6
RL: RCT (Reactant)
(reaction of, with sodium thiosulfate and mercaptodiallylaminotriazine)

IT 110-57-6

(reaction of, with sodium thiosulfate and sodium hexahydroazopinythiocarbothiolate)

IT 13402-50-1
RL: RCT (Reactant)
(reaction of, with triethylammonium diethyldithiocarbamic)

IT 5685-06-3
RL: RCT (Reactant)
(reaction of, with xylenedisulfenyl chloride)

IT 42938-39-6 42938-45-4
RL: USES (Uses)
(vulcanizing agents)

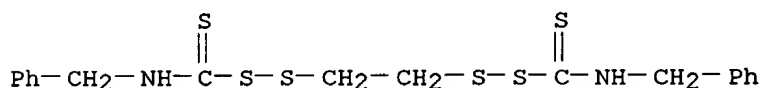
IT 42777-12-8 42938-10-3 42938-11-4 42938-12-5 42938-13-6
42938-14-7 42938-15-8 42938-16-9 42938-17-0 42938-20-5
42938-21-6 42938-23-8 42938-24-9 42938-25-0 42938-26-1
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42938-65-8 42938-66-9 42938-71-6 42938-76-1 42938-78-3
42978-62-1 43031-05-6 55620-82-1 55620-83-2 55620-84-3
55620-85-4 55620-86-5 55620-93-4 55637-31-5
RL: USES (Uses)
(vulcanizing agents, for natural **rubber**)

IT 41538-17-4
RL: USES (Uses)
(vulcanizing agents, for **rubber**)

IT **42938-27-2P**
RL: IMF (Industrial manufacture); PREP (Preparation)
(prepn. of)

RN 42938-27-2 HCAPLUS

CN Carbamo(dithioperoxo)thioic acid, (phenylmethyl)-, 1,2-ethanediyl ester
(9CI) (CA INDEX NAME)



L10 ANSWER 47 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1973:454674 HCAPLUS

DN 79:54674

TI Rubber-crosslinking agents

IN Trivette, Chester Draper, Jr.

PA Monsanto Co.

SO Ger. Offen., 128 pp.

CODEN: GWXXBX

DT Patent

LA German

IC C07D; C08C

CC 38-10 (Elastomers, Including Natural Rubber)

Section cross-reference(s): 27, 28, 23, 29

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2256511	A1	19730530	DE 1972-2256511	19721117
	DE 2256511	C3	19800619		
	DE 2256511	B2	19790927		
	US 3869435	A	19750304	US 1971-200595	19711119
PRAI	US 1971-200595		19711119		

AB Rubber compns. had better Mooney scorch, rheometer, and reversion data when they were crosslinked with 1 of a large no. of polysulfides, R1SnR2SnR1 [R1 = N-substituted thiocarbamoyl, a heterocyclic group, or R23P(:S) (R3 = alkoxy), R2 = alkylene or aralkylene, n = 2,3,4]. Thus, a

ZnO, stearic acid, hydrocarbon plasticizer, Santoflex 13, and 1,2-bis(N,N-dimethylthiocarbamoyldithio)ethane (I) [41538-17-4] (prepd. by reaction of 1,2-ethanedithiol chlorides [24127-98-8] and Na dimethyldithiocarbamate [128-04-1]) had a Mooney scorch T5 of 41.0 min at 121.deg. and no reversion in the rheometer at 164.deg.. A similar compn. contg. S and Santocure NS instead of I had a T5 of 32.0 min and a reversion of 63 cm kg (10 min).

ST rubber crosslinking; polysulfide crosslinker; Mooney scorch rubber; rheometry rubber; reversion rubber

IT **Rubber**, synthetic
(EPDM and chlorosulfonylated polyethylene, vulcanizing agents for, polysulfides as)

IT Vulcanizing agents
(polysulfide derivs.)

IT Bunte salts
Sulfenyl chlorides
RL: RCT (Reactant)
(reaction of, with thiols)

IT **Rubber**, butadiene, uses and miscellaneous
Rubber, butadiene-styrene, uses and miscellaneous
Rubber, butyl, uses and miscellaneous
Rubber, isoprene
Rubber, natural, uses and miscellaneous
Rubber, neoprene, uses and miscellaneous
Rubber, nitrile, uses and miscellaneous
(vulcanizing agents for, polysulfides as)

IT Thiols, reactions
RL: RCT (Reactant)
(with sulfenyl chlorides)

IT Ethene, homopolymer, chlorosulfonylated
RL: PREP (Preparation)
(**rubber**, vulcanizing agents for, polysulfides as)

IT 5210-79-7 24678-65-7
RL: RCT (Reactant)
(reaction of, with dihalides and sodium thiosulfate)

IT 7772-98-7
RL: RCT (Reactant)
(reaction of, with dihalides and thiols)

IT 96-53-7 128-04-1 140-92-1 149-30-4 540-63-6 583-39-1 2382-96-9
2637-34-5 4208-42-8 5115-14-0 5210-78-6 5685-06-3 17309-13-6
17654-88-5 22325-27-5 42937-91-7 42937-97-3
RL: RCT (Reactant)
(reaction of, with sulfenyl chlorides)

IT 528-76-7 2757-23-5 24127-98-8 26542-76-7 33405-92-4 35792-39-3
42937-79-1 42937-80-4 42937-81-5 42937-82-6 42937-83-7
42937-84-8 42937-85-9 42937-86-0 42937-87-1
RL: RCT (Reactant)
(reaction of, with thiols)

IT 106-93-4 764-41-0
RL: RCT (Reactant)
(reaction of, with thiols and sodium thiosulfate)

IT 41538-17-4 42777-12-8 42938-01-2 42938-02-3 42938-03-4
42938-04-5 42938-05-6 42938-06-7 42938-07-8 42938-08-9
42938-09-0 42938-10-3 42938-11-4 42938-12-5 42938-13-6
42938-14-7 42938-15-8 42938-16-9 42938-17-0 42938-18-1
42938-19-2 42938-20-5 42938-21-6 42938-22-7 42938-23-8
42938-24-9 42938-25-0 42938-26-1 42938-27-2 42938-28-3
42938-29-4 42938-30-7 42938-31-8 42938-32-9 42938-33-0
42938-34-1 42938-35-2 42938-36-3 42938-37-4 42938-38-5
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42938-45-4 42938-46-5 42938-47-6 42938-48-7 42938-49-8
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42938-61-4 42938-62-5 42938-63-6 42938-64-7 42938-65-8
42938-66-9 42938-67-0 42938-68-1 42938-69-2 42938-70-5
42938-71-6 42938-72-7 42938-73-8 42938-74-9 42938-75-0

RL: USES (Uses)

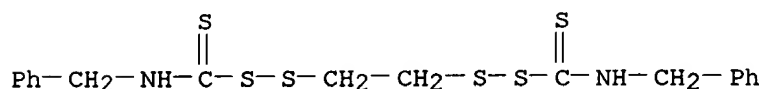
(vulcanizing agents)

IT 42938-27-2

RL: USES (Uses)

(vulcanizing agents)

RN 42938-27-2 HCAPLUS

CN Carbamo(dithioperoxo)thioic acid, (phenylmethyl)-, 1,2-ethanediyl ester
(9CI) (CA INDEX NAME)

L10 ANSWER 48 OF 48 HCAPLUS COPYRIGHT 2000 ACS

AN 1968:403471 HCAPLUS

DN 69:3471

TI Curing halogenated polyolefins

IN Lund, Richard B.; Pierce, Arleen C.; Turi, Edith; Oswald, Hendrikus J.

PA Allied Chemical Corp.

SO U.S., 3pp.

CODEN: USXXAM

DT Patent

LA English

NCL 260094900

CC 36 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3379707	A	19680423	US 1964-405253	19641020
GI	For diagram(s), see printed CA Issue.				
AB	Chlorinated polyethylene contg. 60-70% Cl is cured by crosslinking with 4-15% of a N-contg. compd. Thus, 4 g. of crosslinking agent was added to 100 g. chlorinated polyethylene [60.1% Cl, intrinsic viscosity 4.2 dl./g., (o-Cl ₂ C ₆ H ₄ , 100.degree.)] and the mixt. heated in air to 200.degree. for 1 hr. The amt. of gel formation was measured, indicating the degree of cross-linking. A control was used contg. no crosslinking agent (cross-linking agent and % gel given): -, 34; 2,2'-dithiobisbenzimidazole, 89; 2-thiobenzimidazole, 93; 4-(.beta.-styryl)pyridine, 96; 2-benzylpyridine, 99; 2-(carboxymethylthio)-4-methylpyrimidine, 88; di-.beta.-naphthyl-p-phenylenediamine, 90; N,N'-diphenyl-p-phenylenediamine, 92; N,N'-di-2-pyridyl-p-chlorobenzylidenediamine, 87; tetrabenzylthiuram disulfide, 91; N-bromosuccinimide, 99; pyridinium bromide perbromide, 100; triisopropanolamine borate, 84; N,N,N',N',N'',N''-hexabutylmelamine, 95; N,N',N''-trimethylmelamine, 88; N,N',N''-triethylmelamine, 90; N,N',N''-tripropylmelamine, 91; N,N',N''-tributylmelamine, 87; 5-methyl-2-oxazolidone, 80; trichloroisocyanuric acid, 91; 3-amino-1,2,4-triazole, 85; tirs(2-methyl-1-aziridinyl)phosphine oxide, 96; and bis(1,3-diphenyl-2-imidazolidinylidene) (I), 91.				
ST	curing halogenated polyolefins; polyolefins halogenated curing; halogenated polyolefins curing; crosslinking chlorinated polyethylene; chlorinated polyethylene crosslinking; polyethylene chlorinated crosslinking; benzimidazoles crosslinking; melamines crosslinking; oxazolidines crosslinking; triazoles crosslinking				
IT	Crosslinking (of chlorinated ethylene polymers , heterocyclic and other nitrogen compds. as agents for)				
IT	Nitrogen, heterocyclic and other RL: USES (Uses) (as crosslinking agents for chlorinated ethylene polymers)				
IT	57-39-6	61-82-5	74-31-7	87-90-1	93-46-9
	101-00-8	101-82-6	103-31-1	128-08-5	583-39-1
	875-38-7	1072-70-4	1155-37-9		

16268-94-3 16268-97-6

RL: USES (Uses)
(as crosslinking agent for chlorinated ethylene **polymers**)

IT 9002-88-4, reactions

RL: RCT (Reactant)

(chlorinated, crosslinking agents for, heterocyclic and other nitrogen
compds. as)

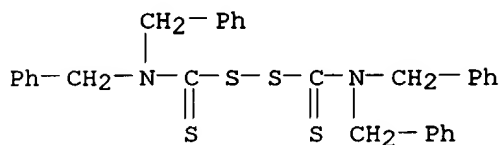
IT **10591-85-2**

RL: USES (Uses)

(as crosslinking agent for chlorinated ethylene **polymers**)

RN 10591-85-2 HCAPLUS

CN Thioperoxydicarbonic diamide ([(H₂N)C(S)]₂S₂), tetrakis(phenylmethyl)-
(9CI) (CA INDEX NAME)



(FR(W) 94)

=> s fr 94-009740/apps

L3 1 FR94-9740/AP
9 FR94-9740/PRN
9 FR 94-009740/APPS
(FR94-9740/AP, PRN)

=> d ibib fam 1-9

L3 ANSWER 1 OF 9 INPADOC COPYRIGHT 2002 EPO

LEVEL 1

ACCESSION NUMBER: 143219475 INPADOC EW 200104 ED 20010130
UW 200127 UP 20010709
TITLE: COMPOSICION DE CAUCHO DESPROVISTA DE PRECURSOR DE
NITROSAMINA CANCERIGENA Y QUE SIRVE DE GOMA DE UNION.
INVENTOR(S):
ORIGINAL: CHAUVIN, BRIGITTE; MANGERET, JEAN-LUC
STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC
LOCATION: FR; FR
PATENT ASSIGNEE(S):
ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS
MICHELIN-MICHELIN & CIE
STANDARDIZED: MICHELIN & CIE
LOCATION: FR
DOCUMENT TYPE: Patent
PATENT INFO. TYPE: EST3 TRANSLATION OF COMPLETE TEXT OF A GRANTED
EUROPEAN PATENT

PATENT INFORMATION:

	NUMBER	KIND	DATE
	ES 2151011	T3	20001216
APPLICATION INFO.:	ES 1995-111392	EP	19950720
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

PATENT FAMILY INFORMATION

AN 143219475 INPADOC

+-----PRAI-----+		+-----AI-----+	
FR 1994-9740	A 19940803	AU 1995-28310	A 19950801
		BR 1995-3527	A 19950802
		CN 1995-108666	A 19950803
		DE 1995-69519207	A 19950720
		EP 1995-111392	A 19950720
		ES 1995-111392	EP 19950720
		FR 1994-9740	A 19940803
		JP 1995-198276	A 19950803
		ZA 1995-6444	A 19950802
+-----AI-----+		+-----PI-----+	
AU 1995-28310	A 19950801	AU 722670	B2 20000810
		AU 9528310	A1 19960215
BR 1995-3527	A 19950802	BR 9503527	A 19960416
CN 1995-108666	A 19950803	CN 1120559	A 19960417
DE 1995-69519207	A 19950720	DE 69519207	C0 20001130
		DE 69519207	T2 20010523

EP 1995-111392	A	19950720	EP 695780	A1 19960207
ES 1995-111392	EP	19950720	EP 695780	B1 20001025
FR 1994-9740	A	19940803	ES 2151011	T3 20001216
JP 1995-198276	A	19950803	FR 2723374	A1 19960209
ZA 1995-6444	A	19950802	JP 08059898	A2 19960305
			ZA 9506444	A 19960322

1 priority, 9 applications, 12 publications

L3 ANSWER 2 OF 9 INPADOC COPYRIGHT 2002 EPO

LEVEL 2

ACCESSION NUMBER: 140563410 INPADOC EW 200121 ED 20010531
 UW 200127 UP 20010709

TITLE: KAUTSCHUKZUSAMMENSETZUNG OHNE GEHALT AN CARCINOGENEN
 NITROSAMINORLAEUFERN, DIE ALS VERBINDUNGSGUMMI
 GEEIGNET IST

INVENTOR(S):

ORIGINAL: CHAUVIN, BRIGITTE; MANGERET, JEAN-LUC
 STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC
 LOCATION: FR; FR

PATENT ASSIGNEE(S):

ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS
 MICHELIN-MICHELIN & CIE., CLERMONT-FERRAND
 STANDARDIZED: MICHELIN & CIE
 LOCATION: FR

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: DET2 TRANSL. OF THE EUROPEAN PATENT SPECIFICATION

PATENT INFORMATION:

	NUMBER	KIND	DATE
	DE 69519207	T2	20010523
APPLICATION INFO.:	DE 1995-69519207	A	19950720
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

PATENT FAMILY INFORMATION

AN 140563410 INPADOC

+-----PRAI-----+
 FR 1994-9740 A 19940803

+-----AI-----+
 AU 1995-28310 A 19950801
 BR 1995-3527 A 19950802
 CN 1995-108666 A 19950803
 DE 1995-69519207 A 19950720
 EP 1995-111392 A 19950720
 ES 1995-111392 EP 19950720
 FR 1994-9740 A 19940803
 JP 1995-198276 A 19950803
 ZA 1995-6444 A 19950802

+-----AI-----+
 AU 1995-28310 A 19950801
 BR 1995-3527 A 19950802
 CN 1995-108666 A 19950803
 DE 1995-69519207 A 19950720
 EP 1995-111392 A 19950720
 ES 1995-111392 EP 19950720
 FR 1994-9740 A 19940803
 JP 1995-198276 A 19950803
 ZA 1995-6444 A 19950802

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 AU 722670 B2 20000810
 AU 9528310 A1 19960215
 BR 9503527 A 19960416
 CN 1120559 A 19960417
 DE 69519207 C0 20001130
 DE 69519207 T2 20010523
 EP 695780 A1 19960207
 EP 695780 B1 20001025
 ES 2151011 T3 20001216
 FR 2723374 A1 19960209
 JP 08059898 A2 19960305
 ZA 9506444 A 19960322

1 priority, 9 applications, 12 publications

L3 ANSWER 3 OF 9 INPADOC COPYRIGHT 2002 EPO

LEVEL 1
 ACCESSION NUMBER: 89483733 INPADOC
 UW 200127 UP 20010709
 TITLE: RUBBER COMPOSITION FREED FROM CARCINOGENIC
 NITROSOAMINE PRECURSOR AND FUNCTIONING AS BONDING
 RUBBER
 INVENTOR(S):
 ORIGINAL: BURIJITSUTO SHIYOObUAN; JIYAN RUUKU MANJIERU
 STANDARDIZED: BURIJITSUTO SHIYOObUAN; JIYAN RUUKU MANJIERU
 PATENT ASSIGNEE(S):
 ORIGINAL: MICHELIN & CIE
 STANDARDIZED: MICHELIN & CIE
 LOCATION: FR
 TITLE LANGUAGE: English
 DOCUMENT TYPE: Patent
 PATENT INFO. TYPE: JPA2 DOCUMENT LAID OPEN TO PUBLIC INSPECTION
 PATENT INFORMATION:

	NUMBER	KIND	DATE
	JP 08059898	A2	19960305
APPLICATION INFO.:	JP 1995-198276	A	19950803
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

PATENT FAMILY INFORMATION
 AN 89483733 INPADOC

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FR 1994-9740	A	19940803	AU 1995-28310	A	19950801
			BR 1995-3527	A	19950802
			CN 1995-108666	A	19950803
			DE 1995-69519207	A	19950720
			EP 1995-111392	A	19950720
			ES 1995-111392	EP	19950720
			FR 1994-9740	A	19940803
			JP 1995-198276	A	19950803
			ZA 1995-6444	A	19950802
+-----AI-----+			+-----PI-----+		
AU 1995-28310	A	19950801	AU 722670	B2	20000810
			AU 9528310	A1	19960215
BR 1995-3527	A	19950802	BR 9503527	A	19960416
CN 1995-108666	A	19950803	CN 1120559	A	19960417
DE 1995-69519207	A	19950720	DE 69519207	C0	20001130
			DE 69519207	T2	20010523
EP 1995-111392	A	19950720	EP 695780	A1	19960207
			EP 695780	B1	20001025
ES 1995-111392	EP	19950720	ES 2151011	T3	20001216
FR 1994-9740	A	19940803	FR 2723374	A1	19960209
JP 1995-198276	A	19950803	JP 08059898	A2	19960305
ZA 1995-6444	A	19950802	ZA 9506444	A	19960322

1 priority, 9 applications, 12 publications

L3 ANSWER 4 OF 9 INPADOC COPYRIGHT 2002 EPO

LEVEL 1
 ACCESSION NUMBER: 45543415 INPADOC
 UW 200127 UP 20010709
 TITLE: RUBBER COMPOSITION WHICH IS FREE OF CARCINOGENIC
 NITROSAMINE PRECURSOR AND SERVES AS CONNECTING RUBBER
 INVENTOR(S):
 ORIGINAL: BRIGITTE CHAUVIN; JEAN-LUC MANGERET
 STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC
 PATENT ASSIGNEE(S):
 ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS

STANDARDIZED: MICHELIN-MICHELIN & CIE.
 LOCATION: FR
 DOCUMENT TYPE: Patent
 PATENT INFO. TYPE: ZAA PATENT SPECIFICATION
 PATENT INFORMATION:

	NUMBER	KIND	DATE
	ZA 9506444	A	19960322
APPLICATION INFO.:	ZA 1995-6444	A	19950802
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

PATENT FAMILY INFORMATION
 AN 45543415 INPADOC

+-----PRAI-----+		+-----AI-----+	
FR 1994-9740	A 19940803	AU 1995-28310	A 19950801
		BR 1995-3527	A 19950802
		CN 1995-108666	A 19950803
		DE 1995-69519207	A 19950720
		EP 1995-111392	A 19950720
		ES 1995-111392	EP 19950720
		FR 1994-9740	A 19940803
		JP 1995-198276	A 19950803
		ZA 1995-6444	A 19950802

+-----AI-----+		+-----PI-----+	
AU 1995-28310	A 19950801	AU 722670	B2 20000810
BR 1995-3527	A 19950802	AU 9528310	A1 19960215
CN 1995-108666	A 19950803	BR 9503527	A 19960416
DE 1995-69519207	A 19950720	CN 1120559	A 19960417
EP 1995-111392	A 19950720	DE 69519207	C0 20001130
ES 1995-111392	EP 19950720	DE 69519207	T2 20010523
FR 1994-9740	A 19940803	EP 695780	A1 19960207
JP 1995-198276	A 19950803	EP 695780	B1 20001025
ZA 1995-6444	A 19950802	ES 2151011	T3 20001216
		FR 2723374	A1 19960209
		JP 08059898	A2 19960305
		ZA 9506444	A 19960322

1 priority, 9 applications, 12 publications

L3 ANSWER 5 OF 9 INPADOC COPYRIGHT 2002 EPO

LEVEL 1

ACCESSION NUMBER: 36522193 INPADOC

UW 200127 UP 20010709

TITLE: RUBBER COMPOSITION WHICH IS FREE OF CARCINOGENIC
 NITROSAMINE PRECURSOR AND SERVES AS CONNECTING RUBBER

INVENTOR(S):

ORIGINAL: BRIGITTE CHAUVIN; JEAN-LUC MANGERET
 STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC
 LOCATION: FR; FR

PATENT ASSIGNEE(S):

ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS
 MICHELIN-MICHELIN & CIE
 STANDARDIZED: MICHELIN & CIE

LOCATION: FR

TITLE LANGUAGE: English

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: CNA UNEXAMINED APPLIC. OPEN TO PUBLIC INSPECTION

PATENT INFORMATION:

	NUMBER	KIND	DATE
	CN 1120559	A	19960417
APPLICATION INFO.:	CN 1995-108666	A	19950803

PATENT FAMILY INFORMATION

AN 36522193 INPADOC

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FR 1994-9740 A 19940803

+-----AI-----+
AU 1995-28310 A 19950801
BR 1995-3527 A 19950802
CN 1995-108666 A 19950803
DE 1995-69519207 A 19950720
EP 1995-111392 A 19950720
ES 1995-111392 EP 19950720
FR 1994-9740 A 19940803
JP 1995-198276 A 19950803
ZA 1995-6444 A 19950802

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AU 1995-28310 A 19950801

BR 1995-3527 A 19950802
CN 1995-108666 A 19950803
DE 1995-69519207 A 19950720

EP 1995-111392 A 19950720

ES 1995-111392 EP 19950720
FR 1994-9740 A 19940803
JP 1995-198276 A 19950803
ZA 1995-6444 A 19950802

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AU 722670 B2 20000810
AU 9528310 A1 19960215
BR 9503527 A 19960416
CN 1120559 A 19960417
DE 69519207 C0 20001130
DE 69519207 T2 20010523
EP 695780 A1 19960207
EP 695780 B1 20001025
ES 2151011 T3 20001216
FR 2723374 A1 19960209
JP 08059898 A2 19960305
ZA 9506444 A 19960322

1 priority, 9 applications, 12 publications

L3 ANSWER 6 OF 9 INPADOC COPYRIGHT 2002 EPO

LEVEL 1

ACCESSION NUMBER: 20710577 INPADOC

UW 200127 UP 20010709

TITLE: COMPOSICAO DESPROVIDA DE PRECURSOR DE PELO MENOS UMA
NITROSAMINA CANCERIGENA E PROCESSO QUE CONSISTE EM
VULCANIZAR A MESMA

INVENTOR(S):

ORIGINAL: BRIGITTE CHAUVIN; JEAN-LUC MANGERET
STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC

PATENT ASSIGNEE(S):

ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS MICHELIN -
MICHELIN & CIE.
STANDARDIZED: MICHELIN & CIE

LOCATION: FR

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: BRA UNEXAMINED PATENT APPLICATION

PATENT INFORMATION:

	NUMBER	KIND	DATE
	BR 9503527	A	19960416
APPLICATION INFO.:	BR 1995-3527	A	19950802
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

PATENT FAMILY INFORMATION

AN 20710577 INPADOC

+-----PRAI-----+
FR 1994-9740 A 19940803

+-----AI-----+
AU 1995-28310 A 19950801
BR 1995-3527 A 19950802
CN 1995-108666 A 19950803
DE 1995-69519207 A 19950720
EP 1995-111392 A 19950720

ES 1995-111392	EP 19950720
FR 1994-9740	A 19940803
JP 1995-198276	A 19950803
ZA 1995-6444	A 19950802

+-----AI-----+		
AU 1995-28310	A	19950801
BR 1995-3527	A	19950802
CN 1995-108666	A	19950803
DE 1995-69519207	A	19950720
EP 1995-111392	A	19950720
ES 1995-111392	EP	19950720
FR 1994-9740	A	19940803
JP 1995-198276	A	19950803
ZA 1995-6444	A	19950802

+-----PI-----+	
AU 722670	B2 20000810
AU 9528310	A1 19960215
BR 9503527	A 19960416
CN 1120559	A 19960417
DE 69519207	C0 20001130
DE 69519207	T2 20010523
EP 695780	A1 19960207
EP 695780	B1 20001025
ES 2151011	T3 20001216
FR 2723374	A1 19960209
JP 08059898	A2 19960305
ZA 9506444	A 19960322

1 priority, 9 applications, 12 publications

L3 ANSWER 7 OF 9 INPADOC COPYRIGHT 2002 EPO

LEVEL 2

ACCESSION NUMBER: 13408691 INPADOC EW 200043 ED 20001031
UW 200043 UP 20001031

TITLE: RUBBER COMPOSITION FREE OF CARCINOGENIC NITROSAMINE
PRECURSORS AND SUITABLE AS JOINING MATERIAL

INVENTOR(S):

ORIGINAL: CHAUVIN, BRIGITTE; MANGERET, JEAN-LUC
STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC
LOCATION: FR; FR

PATENT ASSIGNEE(S):

ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS
MICHELIN-MICHELIN & CIE
STANDARDIZED: MICHELIN & CIE
LOCATION: FR

TITLE LANGUAGE: English; French; German

LANGUAGE: French

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: EPB1 PATENT

PATENT INFORMATION:

NUMBER	KIND	DATE

EP 695780	B1	20001025
DESIGNATED STATES:	R:	BE DE ES FR GB IT SE
APPLICATION INFO.:	EP 1995-111392	A 19950720
PRIORITY APPLN. INFO.:	FR 1994-9740	A 19940803

PATENT FAMILY INFORMATION

AN 13408691 INPADOC

+-----PRAI-----+		
FR 1994-9740	A	19940803

+-----AI-----+	
AU 1995-28310	A 19950801
BR 1995-3527	A 19950802
CN 1995-108666	A 19950803
DE 1995-69519207	A 19950720
EP 1995-111392	A 19950720
ES 1995-111392	EP 19950720
FR 1994-9740	A 19940803
JP 1995-198276	A 19950803
ZA 1995-6444	A 19950802

+-----AI-----+		
AU 1995-28310	A	19950801

+-----PI-----+	
AU 722670	B2 20000810
AU 9528310	A1 19960215

BR 1995-3527	A	19950802	BR 9503527	A	19960416
CN 1995-108666	A	19950803	CN 1120559	A	19960417
DE 1995-69519207	A	19950720	DE 69519207	C0	20001130
			DE 69519207	T2	20010523
EP 1995-111392	A	19950720	EP 695780	A1	19960207
			EP 695780	B1	20001025
ES 1995-111392	EP	19950720	ES 2151011	T3	20001216
FR 1994-9740	A	19940803	FR 2723374	A1	19960209
JP 1995-198276	A	19950803	JP 08059898	A2	19960305
ZA 1995-6444	A	19950802	ZA 9506444	A	19960322

1 priority, 9 applications, 12 publications

L3 ANSWER 8 OF 9 INPADOC COPYRIGHT 2002 EPO

LEVEL 1

ACCESSION NUMBER: 12580708 INPADOC
 TITLE: COMPOSITION DE CAOUTCHOUC DEPOURVUE DE PRECUSSEUR DE
 NITROSAMINE CANCERIGENE ET SERVANT DE GOMME DE

LIAISON

INVENTOR(S):

ORIGINAL: CHAUVIN BRIGITTE; MANGERET JEAN LUC
 STANDARDIZED: BRIGITTE CHAUVIN; LUC MANGERET JEAN

PATENT ASSIGNEE(S):

ORIGINAL: MICHELIN ET CIE
 STANDARDIZED: MICHELIN & CIE

LOCATION: FR

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: FRA1 APPLICATION, FIRST PUBLICATION

PATENT INFORMATION:

	NUMBER	KIND	DATE
	FR 2723374	A1	19960209
APPLICATION INFO.:	FR 1994-9740	A	19940803
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

PATENT FAMILY INFORMATION

AN 12580708 INPADOC

+-----PRAI-----+
 FR 1994-9740 A 19940803

+-----AI-----+
 AU 1995-28310 A 19950801
 BR 1995-3527 A 19950802
 CN 1995-108666 A 19950803
 DE 1995-69519207 A 19950720
 EP 1995-111392 A 19950720
 ES 1995-111392 EP 19950720
 FR 1994-9740 A 19940803
 JP 1995-198276 A 19950803
 ZA 1995-6444 A 19950802

+-----AI-----+
 AU 1995-28310 A 19950801
 BR 1995-3527 A 19950802
 CN 1995-108666 A 19950803
 DE 1995-69519207 A 19950720
 EP 1995-111392 A 19950720
 ES 1995-111392 EP 19950720
 FR 1994-9740 A 19940803
 JP 1995-198276 A 19950803
 ZA 1995-6444 A 19950802

+-----PI-----+
 AU 722670 B2 20000810
 AU 9528310 A1 19960215
 BR 9503527 A 19960416
 CN 1120559 A 19960417
 DE 69519207 C0 20001130
 DE 69519207 T2 20010523
 EP 695780 A1 19960207
 EP 695780 B1 20001025
 ES 2151011 T3 20001216
 FR 2723374 A1 19960209
 JP 08059898 A2 19960305
 ZA 9506444 A 19960322

1 priority, 9 applications, 12 publications

LEVEL 2

ACCESSION NUMBER: 11389985 INPADOC EW 200038 ED 20000926
 UW 200127 UP 20010709

TITLE: RUBBER COMPOSITION WHICH IS FREE OF CARCINOGENIC
 NITROSAMINE PRECURSOR AND SERVES AS CONNECTING RUBBER

INVENTOR(S):
 ORIGINAL: BRIGITTE CHAUVIN; JEAN-LUC MANGERET
 STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC

PATENT ASSIGNEE(S):
 ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS MICHELIN -
 MICHELIN & CIE
 STANDARDIZED: MICHELIN & CIE
 LOCATION: FR

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: AUB2 PATENT (APP. ADVERTISED ACCEPTED)

PATENT INFORMATION:

	NUMBER	KIND	DATE
	AU 722670	B2	20000810
APPLICATION INFO.:	AU 1995-28310	A	19950801
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

PATENT FAMILY INFORMATION

AN 11389985 INPADOC

+-----PRAI-----+		+-----AI-----+	
FR 1994-9740	A 19940803	AU 1995-28310	A 19950801
		BR 1995-3527	A 19950802
		CN 1995-108666	A 19950803
		DE 1995-69519207	A 19950720
		EP 1995-111392	A 19950720
		ES 1995-111392	EP 19950720
		FR 1994-9740	A 19940803
		JP 1995-198276	A 19950803
		ZA 1995-6444	A 19950802
+-----AI-----+		+-----PI-----+	
AU 1995-28310	A 19950801	AU 722670	B2 20000810
		AU 9528310	A1 19960215
BR 1995-3527	A 19950802	BR 9503527	A 19960416
CN 1995-108666	A 19950803	CN 1120559	A 19960417
DE 1995-69519207	A 19950720	DE 69519207	C0 20001130
		DE 69519207	T2 20010523
EP 1995-111392	A 19950720	EP 695780	A1 19960207
		EP 695780	B1 20001025
ES 1995-111392	EP 19950720	ES 2151011	T3 20001216
FR 1994-9740	A 19940803	FR 2723374	A1 19960209
JP 1995-198276	A 19950803	JP 08059898	A2 19960305
ZA 1995-6444	A 19950802	ZA 9506444	A 19960322

1 priority, 9 applications, 12 publications

=> s ep 50720/pn

L4 1 EP 50720/PN
 (EP50720/PN)

=> s ep 9550720

301 EP
 0 9550720
 L5 0 EP 9550720
 (EP(W) 9550720)

L4 ANSWER 1 OF 1 INPADOC COPYRIGHT 2002 EPO

LEVEL 1

AN 3085427 INPADOC
TI SHELF-TYPE HOLDING MAGAZINE FOR DISPERSING MACHINES
IN MEHLAN, BERND; BAYER, JOSEF
INS MEHLAN BERND; BAYER JOSEF
PA SIELAFF GMBH & CO. AUTOMATENBAU HERRIEDEN
PAS SIELAFF GMBH CO AUTOMATEN
PAA DE
LA German
DT Patent
PIT EPA1 PUBL. OF APPLICATION WITH SEARCH REPORT
PI **EP 50720** **A1 19820505**
DS R: DE FR GB IT NL
AI EP 1981-106569 A 19810825
PRAI DE 1980-3040089 A 19801024
OSDW 82-F4148E

LEVEL 2

AN 3085427 INPADOC
TI SHELF-TYPE HOLDING MAGAZINE FOR DISPERSING MACHINES
IN MEHLAN, BERND; BAYER, JOSEF
INS MEHLAN BERND; BAYER JOSEF
PA SIELAFF GMBH & CO. AUTOMATENBAU HERRIEDEN
PAS SIELAFF GMBH CO AUTOMATEN
PAA DE
LA German
DT Patent
PIT EPB1 PATENT
PI **EP 50720** **B1 19840718**
DS R: DE FR GB IT NL
AI EP 1981-106569 A 19810825
PRAI DE 1980-3040089 A 19801024

LEVEL 2

ACCESSION NUMBER: 120861954 INPADOC EW 200030 ED 20000801
 UW 200030 UP 20000801

TITLE: VERFAHREN UND ZUSAMMENSETZUNG DASS VERWENDUNG VON
 SUBSTITUIERTEN MELAMINE ALS HAERTER FUER

NOVOLAC-HARZE

ERMUEGLICHT

INVENTOR(S):
 ORIGINAL: CHAUVIN, BRIGITTE; DUREL, OLIVIER
 STANDARDIZED: CHAUVIN BRIGITTE; DUREL OLIVIER
 LOCATION: FR; FR

PATENT ASSIGNEE(S):
 ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS
 MICHELIN-MICHELIN & CIE., CLERMONT-FERRAND
 MICHELIN & CIE
 STANDARDIZED: MICHELIN & CIE
 LOCATION: FR

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: DET2 TRANSL. OF THE EUROPEAN PATENT SPECIFICATION

PATENT INFORMATION:

	NUMBER	KIND	DATE
	DE 69327323	T2	20000727
APPLICATION INFO.:	DE 1993-69327323	A	19930706
PRIORITY APPLN. INFO.:	WO 1993-EP1747	W	19930706
	FR 1992-8571	A	19920708

LEVEL 2

ACCESSION NUMBER: 13408691 INPADOC EW 200043 ED 20001031
 UW 200043 UP 20001031

TITLE: RUBBER COMPOSITION FREE OF CARCINOGENIC NITROSAMINE
 PRECURSORS AND SUITABLE AS JOINING MATERIAL

INVENTOR(S):
 ORIGINAL: CHAUVIN, BRIGITTE; MANGERET, JEAN-LUC
 STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC
 LOCATION: FR; FR

PATENT ASSIGNEE(S):
 ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS
 MICHELIN-MICHELIN & CIE
 MICHELIN & CIE
 STANDARDIZED: MICHELIN & CIE
 LOCATION: FR

TITLE LANGUAGE: English; French; German

LANGUAGE: French

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: EPB1 PATENT

PATENT INFORMATION:

	NUMBER	KIND	DATE
	EP 695780	B1	20001025
DESIGNATED STATES:	R: BE DE ES FR GB IT SE		
APPLICATION INFO.:	EP\1995-111392	A	19950720
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

LEVEL 1

ACCESSION NUMBER: 12580708 INPADOC

TITLE: COMPOSITION DE CAOUTCHOUC DEPOURVUE DE PRECUSSEUR DE
 NITROSAMINE CANCERIGENE ET SERVANT DE GOMME DE

LIAISON

INVENTOR(S):
 ORIGINAL: CHAUVIN BRIGITTE; MANGERET JEAN LUC

STANDARDIZED: BRIGITTE CHAUVIN; LUC MANGERET JEAN
PATENT ASSIGNEE(S):
ORIGINAL: MICHELIN ET CIE
STANDARDIZED: MICHELIN & CIE
LOCATION: FR
DOCUMENT TYPE: Patent
PATENT INFO. TYPE: FRA1 APPLICATION, FIRST PUBLICATION
PATENT INFORMATION:

	NUMBER	KIND	DATE

	FR 2723374	A1	19960209
APPLICATION INFO.:	FR 1994-9740	A	19940803
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

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L1 ANSWER 1 OF 5 INPADOC COPYRIGHT 2002 EPO

LEVEL 1

ACCESSION NUMBER: 143219475 INPADOC EW 200104 ED 20010130
UW 200127 UP 20010709

TITLE: COMPOSICION DE CAUCHO DESPROVISTA DE PRECURSOR DE
NITROSAMINA CANCERIGENA Y QUE SIRVE DE GOMA DE UNION.

INVENTOR(S):
ORIGINAL: CHAUVIN, BRIGITTE; MANGERET, JEAN-LUC
STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC
LOCATION: FR; FR

PATENT ASSIGNEE(S):
ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS
MICHELIN-MICHELIN & CIE
STANDARDIZED: MICHELIN & CIE
LOCATION: FR

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: EST3 TRANSLATION OF COMPLETE TEXT OF A GRANTED
EUROPEAN PATENT

PATENT INFORMATION:

	NUMBER	KIND	DATE
	ES 2151011	T3	20001216
APPLICATION INFO.:	ES 1995-111392	EP	19950720
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

=> d ibib 2 3 4 5

L1 ANSWER 2 OF 5 INPADOC COPYRIGHT 2002 EPO

LEVEL 2

ACCESSION NUMBER: 140563410 INPADOC EW 200121 ED 20010531
UW 200127 UP 20010709

TITLE: KAUTSCHUKZUSAMMENSETZUNG OHNE GEHALT AN CARCINOGENEN
NITROSAMINVORLAEUFERN, DIE ALS VERBINDUNGSGUMMI
GEEIGNET IST

INVENTOR(S):
ORIGINAL: CHAUVIN, BRIGITTE; MANGERET, JEAN-LUC
STANDARDIZED: CHAUVIN BRIGITTE; MANGERET JEAN-LUC
LOCATION: FR; FR

PATENT ASSIGNEE(S):
ORIGINAL: COMPAGNIE GENERALE DES ETABLISSEMENTS
MICHELIN-MICHELIN & CIE., CLERMONT-FERRAND
STANDARDIZED: MICHELIN & CIE
LOCATION: FR

DOCUMENT TYPE: Patent

PATENT INFO. TYPE: DET2 TRANSL. OF THE EUROPEAN PATENT SPECIFICATION

PATENT INFORMATION:

	NUMBER	KIND	DATE
	DE 69519207	T2	20010523
APPLICATION INFO.:	DE 1995-69519207	A	19950720
PRIORITY APPLN. INFO.:	FR 1994-9740	A	19940803

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS
 AN 1996:237515 CAPLUS
 DN 124:263213
 TI Vulcanizable rubber compositions free of carcinogenic nitrosamine
 precursors and suitable as joining materials
 IN Chauvin, Brigitte; Mangeret, Jean-Luc
 PA Michelin et Cie., Fr.
 SO Eur. Pat. Appl., 18 pp.
 CODEN: EPXXDW
 DT Patent
 LA French
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	EP 695780	A1	19960207	EP 1995-111392	19950720
	EP 695780	B1	20001025		
	R: BE, DE, ES, FR, GB, IT, SE				
	FR 2723374	A1	19960209	FR 1994-9740	19940803
	ES 2151011	T3	20001216	ES 1995-111392	19950720
	AU 9528310	A1	19960215	AU 1995-28310	19950801 <--
	AU 722670	B2	20000810		
	ZA 9506444	A	19960322	ZA 1995-6444	19950802
	BR 9503527	A	19960416	BR 1995-3527	19950802
	JP 08059898	A2	19960305	JP 1995-198276	19950803
	CN 1120559	A	19960417	CN 1995-108666	19950803
PRAI	FR 1994-9740	A	19940803		

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS
 AN 1996:237515 CAPLUS
 DN 124:263213
 TI Vulcanizable rubber compositions free of carcinogenic nitrosamine
 precursors and suitable as joining materials
 IN Chauvin, Brigitte; Mangeret, Jean-Luc
 PA Michelin et Cie., Fr.
 SO Eur. Pat. Appl., 18 pp.
 CODEN: EPXXDW
 DT Patent
 LA French
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 695780	A1	19960207	EP 1995-111392	19950720
	EP 695780	B1	20001025		
	R: BE, DE, ES, FR, GB, IT, SE				
	FR 2723374	A1	19960209	FR 1994-9740	19940803
	ES 2151011	T3	20001216	ES 1995-111392	19950720
	AU 9528310	A1	19960215	AU 1995-28310	19950801
	AU 722670	B2	20000810		
	ZA 9506444	A	19960322	ZA 1995-6444	19950802
	BR 9503527	A	19960416	BR 1995-3527	19950802
	JP 08059898	A2	19960305	JP 1995-198276	19950803
	CN 1120559	A	19960417	CN 1995-108666	19950803
PRAI	FR 1994-9740	A	19940803		